

American Aviation

The Independent Voice of American Aeronautics

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APRIL 1, 1944

TECHNOLOGY DEPT:

The Time Is Passing

Fortnightly Review

AT A TIME when vital postwar problems are being faced, discussed and decided, the aircraft manufacturers of the United States are in the anomalous position of having no spokesman to represent them in aiding the government in solving the inevitable problems of the transitional period from war to peace.

For more than a year the destiny of the Aeronautical Chamber of Commerce, the logical agency of industry for handling postwar problems, has hung in the balance. Indecision, quibbling, passing the buck, and postponement of action, have been the motivating forces during the past year. Each day that passes without a forthright, courageous and definitive solution leaves the industry in a weaker position for the postwar period.

There is no industry in the nation more completely dependent upon government than the aircraft manufacturers. Government needs and seeks the industry's aid in solving the multitude of problems ranging from surplus aircraft to demobilization to the size of the military strength after the war. Yet government has no industry representative with which to discuss the problems—and government is moving rapidly into full discussion and planning for postwar decisions.

The aircraft industry needs a vehicle and a voice to speak for it now. Today there is no means of getting the industry's story across to the authorities concerned.

On April 24 the presidents of the companies comprising the east and the west coast Aircraft War Production Councils, and the officers of the national

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Seeks AMEX Control

A. N. Kemp, president of American Airlines, revealed last fortnight that American is seeking CAB permission to acquire control of American Export Airlines. The \$3,000,000 deal, if approved, will place American in an important position in postwar trans-Atlantic air travel. (See page 23).

Late Bulletins

Action on Air Talks

Providing there are no further hitches in the plans, announcement is expected in a few days on the forthcoming preliminary intergovernmental talks on postwar international air transport, in which the United States, Great Britain and other powers will play major roles.

CAB Issues Report

The Civil Aeronautics Board has issued a 59-page report on aviation insurance, suggesting that the federal government set up a single agency for the collection and dissemination of information on insurance companies and rates affecting all phases of aviation.

Monopoly: The statement made by C. D. Howe, Canadian Minister of Munitions and Supply, in the House of Commons last fortnight (see page 21) appears to put the present Canadian government on record as favoring a "chosen instrument" Trans-Canada Air Lines, the government company, will not only continue to be the only transcontinental operator, but will also fly all Canadian international routes—Howe left no doubt on this point. His announced separation of air and rail transport in Canada will have practically no effect on Trans-Canada. Instead of being operated by Canadian National Railway, TCA will merely switch over to government operation, with the same routes and services. On the other hand, Canadian Pacific Railway, operator of Canadian Pacific Air Lines, will be forced to dispose of its entire airline network.

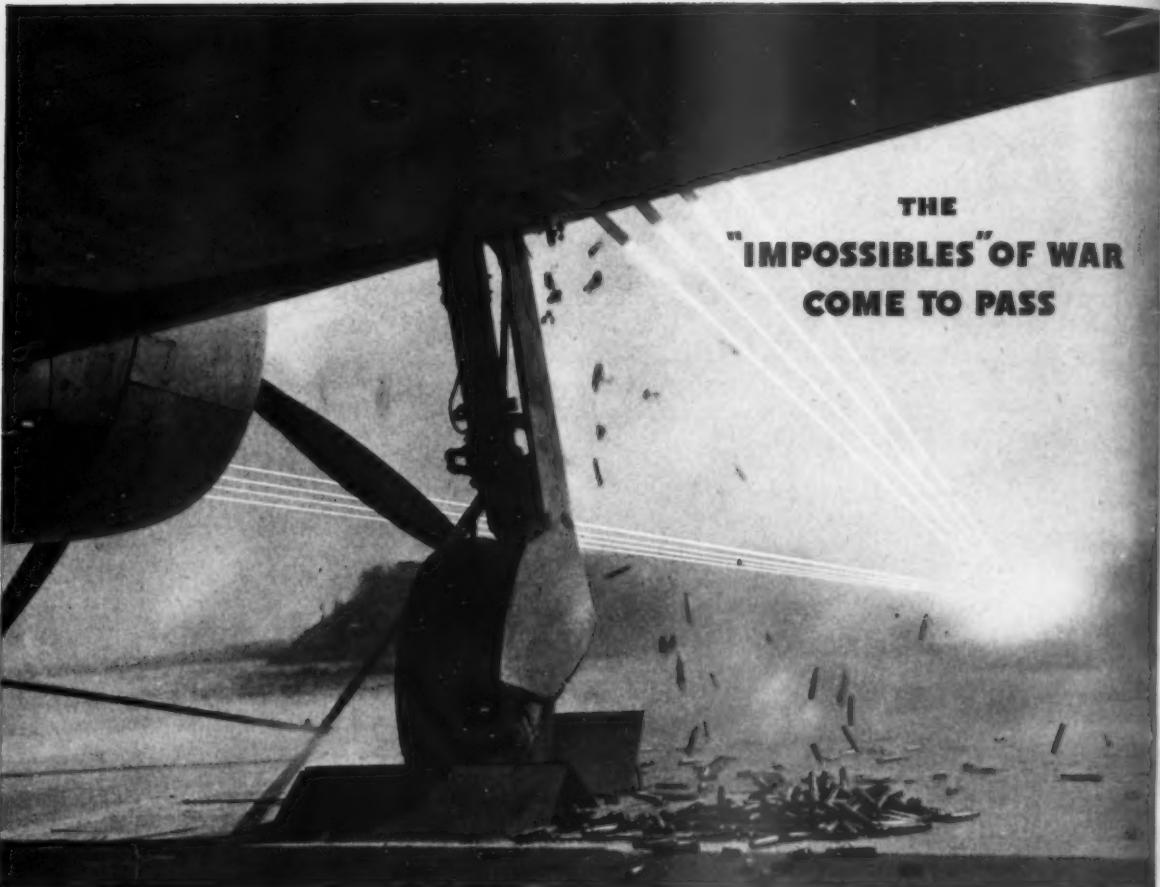
Trend of The News

Surface Carriers: Drafts of legislation to open the gates of air transportation to steamship lines were circulated in Congressional quarters during the fortnight. Introduction of one of the drafts as a bill, by Chairman Schuyler Otis Bland (D., Va.) of House Merchant Marine Committee, appeared imminent. Which draft to introduce was reportedly the delaying factor. Two drafts read by *American Aviation* were, at first glance, similar, but actually were far apart. Both authorized the Maritime Commission to intercede in CAB proceedings on behalf of steamship lines. One, however, would only authorize the Commission's finding to be used as "prima facie" evidence, and would still leave to steamship lines the burden of proof of public convenience and necessity. The other, however, would state that the Commission's finding should be considered "final and conclusive" by the CAB. The latter draft, in effect, would mean that Maritime Commission would have jurisdiction to determine which steamship lines are to receive air routes.

Industry Voice: The feeling is growing rapidly in the aircraft manufacturing industry that it must have a voice through which it can express effectively its views on the peace-time conversion problems of the manufacturers—and a vehicle through which it can give weight to its convictions. Last fortnight the War Production Board announced that it is

(Turn to page 6)

20c



THE
"IMPOSSIBLES" OF WAR
COME TO PASS

WE must some day be able to see enemy targets through the thickest fog and the blackest night . . . a single American soldier must be made a match for an enemy tank . . . we must be able to land armies upon every kind of fortified coast . . . we must send fighter planes seven miles into the sky, if need be, to smash enemy bombers from above . . ."

Thus read the notebooks of military strategy, not so long ago, listing things of war that were out of this world . . . the "impossibles" of the peacetime Sunday supplements.

But war is a relentless taskmaster. And so today we have a parade of "impossibles" of amazing variety—radar, the bazooka, unique troop landing craft . . . and an airplane that fights seven miles up, dives at speeds approaching the speed of sound, spits out more than ten pounds of steel projectile per second!

That airplane is the Thunderbolt — the joint product of an A.A.F. Matériel

Command that knew what it wanted . . . and a corps of Republic engineers who knew it could be done. It is out of many such combinations that this nation is becoming invincibly armed . . . and its aerial supremacy made secure for the future.

Not the least "impossible" aspect of the Thunderbolt was its *production*. How could so intricate and elaborate a machine ever reach "quantity production"?

Yet, in a recent month, more planes came off the Republic Thunderbolt assembly lines than came from the assembly lines of any other company in America producing fighter-type aircraft.

Republic, along with every other war material manufacturer, working hand in hand with the Army Air Forces, is ready for still more "impossibles." Republic Aviation Corporation, Farmingdale, L. I., New York, and Evansville, Indiana.

Republic *firsts* in war point to *firsts* in peace



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LET'S ALL BACK THE ATTACK
WITH WAR BONDS



Highlights from LAISTER-KAUFFMANN the story of John R. Kauffmann



With the success of Laister-Kauffmann's first ship built for the army and with the resultant new and bigger contracts, John R. Kauffmann could look back on work well done. His good sense, his efficiency, his financial and managerial ability had been among the major factors in the success of Laister-Kauffmann.

From President Jack Laister to the expeditors and cost accounting clerks, the men at Laister-Kauffmann say . . . Tell it to Mr. Kauffmann—He's the guy who can add up all the angles!

When the farm boys who were in the Air Corps back in World War II soar away in their sports gliders for a little get-together with the old gang, John R. Kauffmann, Secretary-Treasurer of the Laister-Kauffmann Aircraft Corporation, will grin with pleasure just to have "had a hand" in making it possible.

There'll be a strong bond linking John R. Kauffmann to these ex-Airmen who come back to their farms, ranches and plantations. For even today, when he isn't managing the finances of the country's fastest growing glider manufacturing corporation, Kauffmann hurries to the farm which, together with his purebred livestock, is his hobby.

But that's getting ahead of our story . . . one that goes back to 1919. While working as an accounting assistant in a large shoe manufacturing concern, John R. Kauffmann was studying Mechanical Engineering at Washington University night school. This technical training soon enabled him to obtain work with a utility company, then backed him up when he started with a firm engaged in the engineering and installation of mechanical refrigeration systems.

At this point he suddenly deserted his chosen field to find employment in a brokerage firm! Instinctively he felt that to reach the top in engineering he needed the added background of business and financial experience. So, as a quick-witted margin clerk he started on this new road . . . soon to have his own brokerage firm, clients who trusted him with their life savings and business interests extending into many fields from utilities to airport development.

Looking back, it seems only logical that one day in 1941 John R. Kauffmann should enter into the promotion and financing of the Laister-Kauffmann Aircraft Corporation. He chose his stockholders cautiously, pulled in the required capital and finally found it necessary to devote 100% of his time to his share in the responsibility for the management of Laister-Kauffmann.



*Wings
FOR THE FUTURE*
Laister-Kauffmann
Aircraft Corporation
ST. LOUIS (17) MISSOURI

American Aviation

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April 1, 1944

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The Independent Voice of American Aeronautics

Published the 1st and 15th of each month by American Aviation Associates, Inc., American Building, 1317 F Street, N.W., Washington, 4, D. C. Printed at The Telegraph Press, Cameron and Kelker Sts., Harrisburg, Pa. Entered as second class matter at Washington, D. C. and Harrisburg, Pa.

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PUBLISHING CORPORATION: American Aviation Associates, Inc. Wayne W. Parrish, President; Col. Albert H. Stackpole, Vice-President (in active military service); Eric Bramley, Vice-President; Brig. Gen. E. J. Stackpole, Jr., Treasurer (in active military service); Thomas E. Lindsey, Secy.

AMERICAN AVIATION: Subscription rates for U. S., Mexico, Central and South American countries—\$3 for 1 year; \$4 for 2 years; \$5 for 3 years. Canada—\$3.50 for 1 year; \$6.50 for 2 years. All other countries—\$4.50 for 1 year; \$9.50 for 3 years.

AMERICAN AVIATION DAILY: Published six days each week except holidays; dispatched by air mail. \$15 per month; \$35 for six months; \$170 per year. Group company rates on request. Service Bureau available to all subscribers. CLIFFORD GUEST, Managing Editor.

AMERICAN AVIATION DIRECTORY: Published twice a year, spring and fall. Complete reference data on administrative and operating personnel of airlines, manufacturers, accessories firms and their products, organizations, schools and local operators. Federal and state government agencies concerned with aviation. Single copy, \$5; Annual subscriptions, \$7.50. Discounts on quantity orders. Next edition scheduled for April. HELEN L. WALSH, Managing Editor.

UNIVERSAL AIRLINE SCHEDULES: Published and revised monthly at 139 North Clark Street, Chicago, 2, Ill. (Telephone: State 2154). Complete airline schedules, fares, and travel information, including international air transportation. Subscription rates: \$5.00 per year. Airline rates on request. H. D. WHITNEY, Managing Editor.

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M6	$\frac{3}{4}$	$1\frac{3}{16}$ - $1\frac{1}{2}$	$\frac{1}{16}$	$\frac{1}{16}$ & $\frac{1}{8}$	$\frac{1}{16}$ & $\frac{1}{8}$	
M8	$\frac{5}{8}$	$1\frac{1}{16}$ - $1\frac{1}{2}$	$\frac{1}{16}$	$\frac{1}{16}$ & $\frac{1}{8}$	$\frac{1}{16}$ & $\frac{1}{8}$	
M10	$\frac{7}{8}$	$1\frac{1}{16}$ - $1\frac{1}{2}$	$\frac{1}{16}$	$\frac{1}{16}$ & $\frac{1}{8}$	$\frac{1}{16}$ & $\frac{1}{8}$	
M12	1	$1\frac{1}{16}$ - $1\frac{1}{2}$	$\frac{1}{16}$	$\frac{1}{16}$ & $\frac{1}{8}$	$\frac{1}{16}$ & $\frac{1}{8}$	
M16	$1\frac{1}{4}$	$1\frac{1}{32}$ - $1\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$ & $\frac{1}{8}$	$\frac{1}{16}$ & $\frac{1}{8}$	
M20	$1\frac{1}{2}$	$1\frac{1}{32}$ - $1\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$ & $\frac{1}{8}$	$\frac{1}{16}$ & $\frac{1}{8}$	
M24	$1\frac{1}{4}$	$2\frac{1}{32}$ - $1\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$ & $\frac{1}{8}$	$\frac{1}{16}$ & $\frac{1}{8}$	
M28	2	$2\frac{1}{32}$	$\frac{1}{16}$	$\frac{1}{16}$ & $\frac{1}{8}$	$\frac{1}{16}$ & $\frac{1}{8}$	
M32	$2\frac{1}{4}$	$2\frac{1}{32}$	$\frac{1}{16}$	$\frac{1}{16}$ & $\frac{1}{8}$	$\frac{1}{16}$ & $\frac{1}{8}$	
M36	$2\frac{1}{2}$	$2\frac{1}{32}$	$\frac{1}{16}$	$\frac{1}{16}$ & $\frac{1}{8}$	$\frac{1}{16}$ & $\frac{1}{8}$	
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M48	$3\frac{1}{4}$	$3\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$ & $\frac{1}{8}$	$\frac{1}{16}$ & $\frac{1}{8}$	
M52	$3\frac{1}{2}$	4	$\frac{1}{16}$	$\frac{1}{16}$ & $\frac{1}{8}$	$\frac{1}{16}$ & $\frac{1}{8}$	
M56	4	$4\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$ & $\frac{1}{8}$	$\frac{1}{16}$ & $\frac{1}{8}$	
M60	$4\frac{1}{4}$	$4\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$ & $\frac{1}{8}$	$\frac{1}{16}$ & $\frac{1}{8}$	
M64	$4\frac{1}{2}$	$4\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$ & $\frac{1}{8}$	$\frac{1}{16}$ & $\frac{1}{8}$	

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Trends

(Continued from page 1)

forming an Automobile Industry Advisory Committee composed of the top-ranking official in each company that manufactured passenger cars at the time production was frozen by government order. It will meet in mid-April "to explore the basic problems that must be dealt with by industry and government as a preliminary to the eventual resumption of passenger car production."

This forethought in the automobile industry has not yet been reflected in any positive steps in the aircraft industry. However, most manufacturers now feel that previous differences must be ironed out and that the Aeronautical Chamber of Commerce will be selected as the agency through which the postwar conversion problems will be tackled.

First specific preliminary is the calling of a membership meeting of the Chamber on April 11 for the election of governors. These governors, comprising the top executives of the major companies, will meet in connection with the National Aircraft War Production Council session in Los Angeles April 24. The long-sought reorganization of the Aero Chamber probably will revolve around the California meeting.

Draft Inroads: The overall manpower picture in the aviation industry shows a relatively small percentage of men now subject to Selective Service in the age bracket below 26. The real problem doesn't lie in keeping sufficient workers out of the draft, but in keeping the highly technical men. For instance, 30% of the engineers on aircraft company payrolls are under 26 years of age. Induction of all of them would leave the technical staffs crippled. Half of the engineers are under 30 years. In the aircraft engine industry, men under 26 represent 27.4% of the total. While the requests of the industry for a review procedure have been granted, it appears that the review regulations will be more cumbersome than effective.

Airline Draft: Steps were being taken last fortnight to protect key airline personnel under age 26 from being drafted, but it was still too early to ascertain how successful efforts will be. Some industry officials give much credit to Otto S. Beyer, director of ODT's Division of Transport Personnel and a member of the War Manpower Commission, who is handling the situation. ODT is one of the agencies mentioned in the communication forwarded to state directors of Selective Service by Maj. Gen. Lewis Hershey, Selective Service Director, advising directors that these departments are authorized to designate representatives to endorse special requests for deferments for key registrants under 26. The Air Transport Association has advised the airlines to prepare a Selective Service form 42-A (Special) covering each such registrant. The Air Transport Command also has the matter under advisement and some officials feel that protection will be provided for key airline personnel. One newspaper story last fortnight stated that tighter draft policies will take many pilots now flying passenger planes and that women may be used as replacements. ATA officials emphatically deny the story.

Cargo Planes: For several months four of the airlines have been operating at least one daily schedule exclusively for mail and cargo. Some of the planes used still have passenger seats in them, while others are stripped. Some Army officials, it is understood, have informally advanced the idea that seats could be installed in the stripped planes so that passengers could be carried when mail-cargo loads were not heavy. If any such move is formally made, it will be emphatically opposed by the Post Office Dept., which has found the all-cargo trips invaluable. Air mail does not have a priority, and these trips have enabled the Post Office to clean up accumulated mail at the end of the day—including mail crowded off other schedules by priorities. If schedules were thrown open to passengers, the PO fears that priority-holders would push the mail off. And, the PO claims, average loads on the cargo schedules are amply high to justify their continuance as such. Accordingly, the PO has asked the Civil Aeronautics Board for an opportunity to be heard before any such change is made. CAB now has jurisdiction over schedules.

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Editorial

(Continued from page 1)

council, will gather in Los Angeles. This is indeed an opportune time for the industry to make a clear-cut decision and to put the harrassed Aeronautical Chamber on its feet.

Since the Aircraft Councils have done such an excellent war-time job, why not carry over into a permanent organization the general pattern of organization? Why not create within the Aeronautical Chamber a manufacturers' division or council with the presidents of the various companies serving on east and west coast boards? Such a transition could easily be accomplished and would continue the splendid functions performed by the war-time councils.

At all costs a strong spokesman is needed for the industry. Today the War Department is hard at work on planning for the postwar. So are almost all other government agencies. The industry need have no apologies or hesitance in strengthening the Chamber to handle postwar problems. Not to act now will be to the detriment of the industry, to the government, to the workers, and to the general national welfare.

Discrimination on "E's"

MODIFICATION centers operated by airlines apparently are "untouchables" as far as Army-Navy "E" awards are concerned. Up to now the joint board on awards has refused to grant awards to "mod" centers operated by airlines although the modification of military airplanes by airlines has been one of the very fine jobs of the war. Next door to a large "mod" center employing several thousand workers will be a small concern employing fewer than a hundred people. The smaller firm's employees proudly wear "E's." The "mod" center employees can't get them. Why this stupid discrimination? It's time the reasons were blasted into the open, if the joint board has any reasons at all.

Rebellion?

ARTHUR A. KELLY, chairman of the postwar planning committee of the Frederick, Oklahoma, Chamber of Commerce, has begun a one-man rebellion against the "arbitrary" manner in which delegates were chosen for the First National Clinic of Domestic Aviation Planning held in Oklahoma City under NAA sponsorship last November.

A new clinic is scheduled for Oklahoma City next November and Kelly is advocating the naming or election of delegates by a democratic process. He said he was "intensely interested in obtaining proper representation on the floor" and closes his letter with the following: "Do you want your delegate to the Second Clinic chosen in the same arbitrary manner as in the First Clinic? If not, write me."

Master Minds

WE ARE more and more annoyed at commentators who prate that bombing, by itself, cannot or will not cause the Germans to give in. Does anybody really know? Of course not, because large-scale strategic bombing is only in its early stages. The U. S. A. A. F. Eighth Air Force has only been at strategic bombing with any sizable strength for only a few months, and

even so, its present strength has definite limitations to its potential.

Latest pompous statement to be made on this issue is in *U. S. News* for March 24 which states: "Bombing, by itself, will not cause German collapse at home or at the front." Such a statement shows a woeful lack of knowledge or understanding of strategic bombing, what has been done to date, and the ultimate goals. *U. S. News* either should wait until full airpower gets a chance, or modify such outright statements.

Retribution

REMEMBER the prewar struggles to sell the Army on the value of lightplanes in the war and the scorn which was thrown at the Grasshopper enthusiasts? Read the following news item which appeared in the Italian edition of *Stars and Stripes* for March 2:

"One of the sidelights of yesterday's beachhead fighting (Anzio) was an attack on a Piper Cub by a pair of German Messerschmitts. Ground troops watched while the little observation plane eluded its heavily-armed attackers and landed safely."

Lightplanes have won a powerful niche in warfare within the past year or two, but what a battle it took to sell even the Army airmen!

"The Age of Flight"

A READER of the recent editorial on Tom Braniff's coinage of the phrase "The Flying Forties" has written to say that proper credit also should be given to W. A. Patterson and Harold Crary, president and vice president respectively of United Air Lines, for coining the phrase "The Age of Flight." United is using this phrase in its advertising and it seems that the term has caught on internationally. Nothing, in fact, could more clearly distinguish the era of the airplane than this lucid phrase, so to the coiners go credit due for an excellent contribution.

First Air Raid?

YOU CAN'T prove it by us, but the *London Sunday Times* not long ago carried an item recalling what it believes to be the first leveling of a town from the air in the year 946. It pertains to the Russian city of Korosten which the Soviets retook from the Germans in January. The newspaper article is as follows:

"The first recorded demolition of Korosten took place about the year 946, when Olga, widow of the famous Igor, Prince of Kiev, took a terrible revenge on the Drevlyany, or tribe of forest dwellers, for the killing of her husband.

"Tired of a long, futile siege, Olga offered the Drevlyany peace if they would send her one pigeon and one sparrow alive from every house in Korosten. The terms were accepted, but at dusk Olga, who had learned the incendiary trick from Byzantium, released the birds each laden with an incendiary preparation of phosphorus, whereupon the homing suicide detachment set the whole of Korosten ablaze. Thus Korosten was the first town in history to be raided from the air and levelled by incendiary phosphorus bombs."

WAYNE W. PARRISH



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"SOUTHEASTERN"

the New Name of Georgia Air Service, Inc.



In order to more accurately describe the scope of our operations, we have changed our name to Southeastern Air Service, Inc. This is a logical step, for the organization which was known as Georgia Air Service, Inc. has "grown up," and renders air service throughout the Southeast. Our organization and our work remain the same. Our war-time job continues to be concentration on Primary Training for the Army Air Forces.



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- ★ **No Change of Personnel**
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POST WAR PLANS are important, too! The hundreds of pilots, mechanics and aircraft technicians among our skilled personnel constitute a smooth-working machine which can render invaluable service to aviation in the Southeast.

Our vast backlog of experience in war flying will be available to both commercial and private flyers. Through our affiliated company, Southeastern Air Express, Inc., we plan a system of feeder air lines. Southeastern Air Service, Inc., is the name which will designate the fixed base operations. We invite continued contacts from manufacturers and others in aviation who are interested in post war sales, service and maintenance "all over Dixie."



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EXECUTIVE OFFICES — ATLANTA, GEORGIA

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It's America's Way"



"The nation's airlines have proved to America the value of a strong system of air transportation developed through private enterprise, widespread ownership among its citizens as shareholders and the personal initiative of individuals. Continued application of this native character to air transportation both internationally and domestically can act as a great stabilizing force in our country's future.

"Toward this goal, improvement of domestic transportation can be achieved by the extension of passenger, mail and cargo air service

to all the people of the United States. Internationally, air-linking this nation with the rest of the world will help our country maintain its rightful place as a leader.

"In harmony with these objectives Braniff Airways has laid before the Civil Aeronautics Board plans to extend existing routes to connect the Central West and Southwest

with the East and West coasts, extensions to serve smaller communities and international routes to Europe and Latin America.

"These plans applied domestically and internationally will help assure America of its full share in world development."

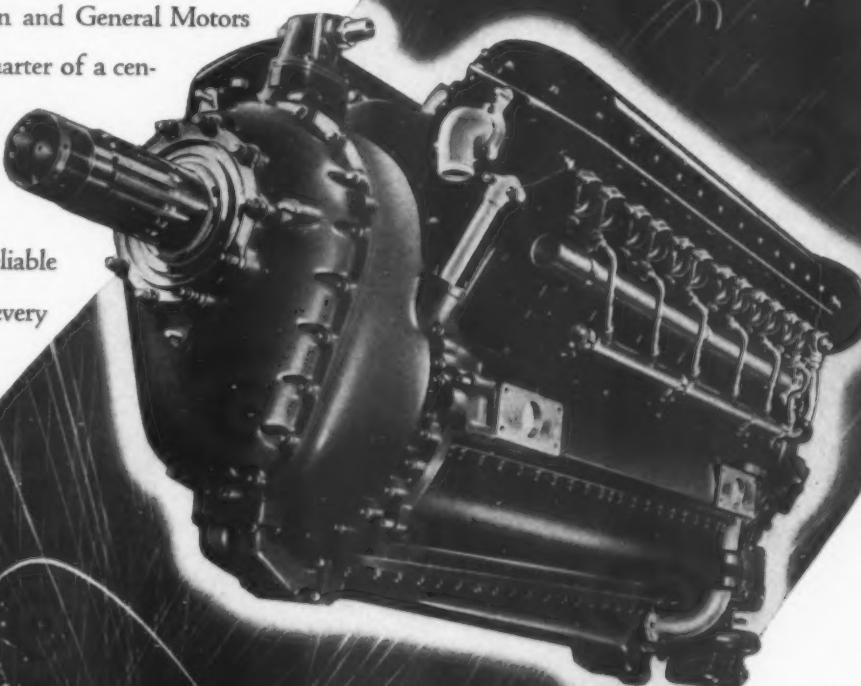

J. D. Bramall
PRESIDENT

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Designed by the Northrop group in cooperation with the Army Air Forces Matériel Command, the formidable "Black Widow" is built to knock the enemy out of the skies by night . . . wherever he may be.

First plane to be developed specifically for night fighting, the "Black Widow" possesses great speed combined with easy flying characteristics. *It packs enough power to destroy anything that flies.*

In the months ahead, news will come back from the battle fronts about this newest U.S. weapon. The P-61 Night Fighter. The "Black Widow" of the dark skies.

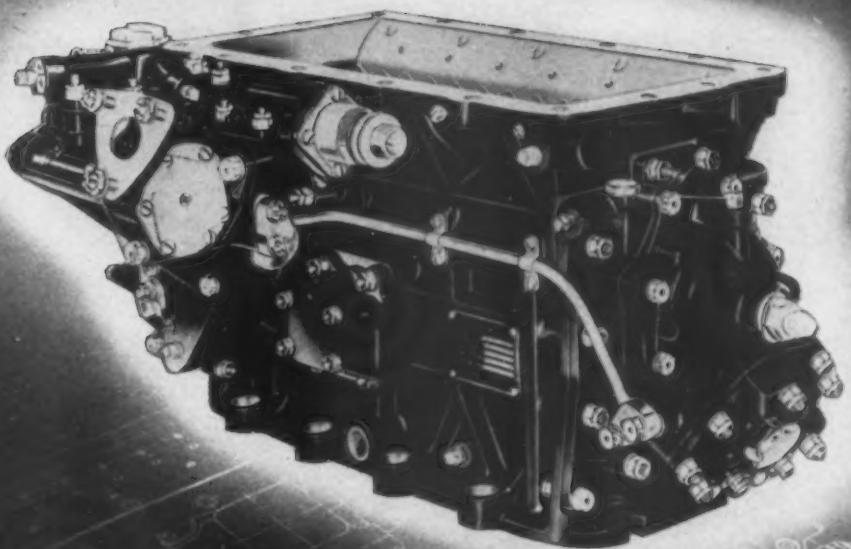


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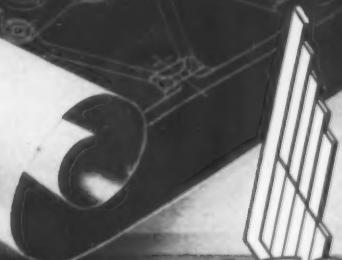
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A Kellett in operation—tests with a State Guard Unit, during pre-war maneuvers.

Pioneer . . . Blazing Air Trails

PIONEERING is an American tradition. Every step in America's advance has been made because pioneer spirits first endured hardships to mark new paths—trails that encouraged others to take up the journey.

The scene pictured above is just one of the blaze-marks in the fifteen year trail marked by rotary wing pioneers. The aircraft flying close to tree tops was an early model, direct-control Kellett, demonstrating its ability to hover in a slight breeze, and to take off or land on any open spot of pasture. Most of this Kellett pioneering was during the most severe depression

the U. S. and the world had ever experienced. It required faith to carry on with confidence in the goal ahead.

Today, Kellett's expanding staff of engineers, backed by this fifteen years of charting new paths, looks forward to Peace—when developments in rotary wing aircraft will have opportunities to serve in the patrolling and servicing of cross-country electric lines and oil pipe lines, in spraying and dusting agricultural crops, in ranching, forestry fire patrol—and many more ways. Kellett Aircraft Corporation, Upper Darby (Philadelphia), Pennsylvania.



Eight years ago—a U.S.A.A.F. Kellett taking off from in front of the Operations Hangar, Wright Field, Dayton, O.

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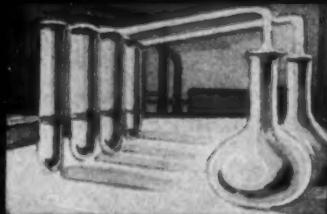
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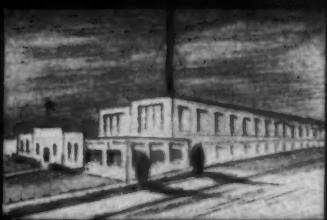
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McCarran Proposes 'All American Line'

Omnibus Aviation Bill Creating New CAA Quickly Becomes Controversial Issue

By KATHERINE E. JOHNSEN

COUNTERING Administration proposals for "freedom of the air" and Lea bill provisions for Federal jurisdiction over intrastate air commerce, Sen. Pat McCarran's (D., Nev.) long-awaited aviation bill was introduced last fortnight, stirring immediate and widespread reactions in the press and in aviation and other interested circles.

The McCarran bill would establish a policy of national "sovereignty of the air", as far as international aviation is concerned, but in the domestic field would leave jurisdiction of intrastate air commerce to the States.

It would create an "All American Flag Line" to handle the nation's postwar foreign air commerce. It would establish the Civil Aeronautics Authority as an independent agency of the Government.

The bill, a result of months of study by the Senator, is contemplated as "The Civil Aeronautics Act of 1944".

A view of the over-all legislative picture at the present time,

however, indicates that the possibilities of enacting major aviation legislation before the year's end are extremely slight.

On the House side of the Capitol, the Lea bill, originally contemplated as "The Civil Aeronautics Act of 1943", is still buried with the Rules Committee. It has not yet been officially killed.

Even if the McCarran bill were speedily passed by the Senate, House Interstate and Foreign Commerce Committee men, who spent a year developing the Lea bill, are not likely to readily accept Senate legislation with fundamental differences.

Questioning of key Senators does show, however, considerable support in the Senate for the underlying principles of the McCarran bill. This presages:

• A clash between the Senate and the Administration on postwar international aviation. The McCarran bill establishes a policy of air "sovereignty"; the President has placed himself on record as favoring a policy of limited "freedom of the air", embodying the right of innocent passage and technical stop.

• A clash between Senate and House aviation leaders on the question of "States' rights". The McCarran measure clearly gives the States jurisdiction over intrastate air commerce; the Lea bill gives the Federal Government jurisdiction over "domestic" air commerce and ignores a distinction between "inter" and "intrastate" commerce.



McCarran

Aviation Calendar

April 5-7—National Aeronautic Meeting, Society of Automotive Engineers, Hotel New Yorker, New York.

April 11—Special membership meeting, Aeronautical Chamber of Commerce, Shoreham Bldg., Washington, D. C., for election of governors.

April 15-17—"AVIADA" Aviation Week celebration, Las Vegas, Nev.

April 17-20—Fourth Annual Conference of Society of Aeronautical Weight Engineers, Brown Palace Hotel, Denver, Colo.

April 27-28—National Light Aircraft Meeting, Detroit.

April 24—Joint meeting, East and West Coast Aircraft War Production Councils, Los Angeles.

April 28-30—Southwest Aircraft and Accessories Exposition, Mustang Airport, Dallas, Tex.

May 1-3—Third Wartime Aviation Planning Conference, A. & M. College of Texas, College Station, Tex.

May 8—Board meeting, National Aeronautic Association, Washington, D. C.

July 10-12—American Association of Airport Executives, annual meeting, Sherman Hotel, Chicago.

Aug. 2-3—1944 National Business Meeting of National Aeronautic Association, Denver, Col.

Oct. 5-7—SAE National Aircraft Engineering and Production meeting and engineering display, Biltmore Hotel, Los Angeles, Cal.

Nov. 11-15—Second National Aviation Planning Clinic, Oklahoma City, Okla.

Dec. 4-6—SAE National Air Cargo Meeting, Hotel Knickerbocker, Chicago, Ill.

Jan. 8-12—1945 SAE Annual Meeting and Engineering Display, Book-Cadillac Hotel, Detroit, Mich.

Great interest has centered around the McCarran bill's proposal to create a \$1,000,000,000-capitalized "All American Flag Line", comprised of existing air carriers and chartered by the Federal Government to represent the United States as a united front in the foreign aviation field.

Terming the idea of such a corporation as "both novel and daring," McCarran declared:

"I am convinced it presents the most sound solution to our national problem of insuring the United States its proper place in world aviation."

S. J. Solomon, chairman of the Airlines Policy Committee on U. S. Air Policy, comprised of 16 domestic airlines advocating competition in the foreign field, however, responded to McCarran's plan by stating that his group would "oppose a monopoly in whatever form it may be proposed, whether as Pan American Airways, a giant corporation or a so-called 'chosen instrument'."

On the other hand, Sen. Arthur Vandenberg (R., Mich.), high-ranking member of the Senate Commerce and Foreign Relations Committees and a prominent Republican Party figure, gave 100% endorsement to the proposal, remarking on the Senate floor:

"... is it not true . . . that if in the postwar aviation world we confront chosen governmental instrumentalities by way of competition on behalf of every other great air power, and if we confront them with a divided, competitive, external airpower of our own, we shall have simply invited them to apply to use the adage, 'Divide and conquer.'"

In a press statement, McCarran said of his bill:

"While short of perfection, as all legislation must be, this bill offers, in my opinion, a sound framework for progressive legislation. In writing this bill I have attempted to collect and correlate the experience since 1938 of the Federal Government, the air transport industry, commercial pilots, the aviation manufacturing industry, private flyers, and others who participate in or are affected by aviation in all its phases."

Following are highlights of the bill:

• International Aviation

No one carrier would be allowed a controlling interest in the proposed "All American Flag Line" for foreign operations. The Line would be prohibited from domestic operations.

This federated airline corporation, McCarran maintained, "will effect a pooling of all the resources both domestic and foreign of the air transport industry, to forge a new agency which will make the commerce of the U. S. first in the air all over the world. This new agency will have back of it not only the full strength of this unity of all factions of the air transport industry of the U. S. concerned with foreign air transportation, but also

all available facilities of the Government of the U. S."

Voting stock in the corporation would be \$200,000,000. The minimum subscription for voting stock by an air carrier would be \$5,000,000. The maximum subscription allowable any one air carrier would be \$50,000,000.

To charges of "monopoly" against his proposed Line, McCarran's retort was: "We leave the road wide open for those who would venture their own fortunes in foreign commerce by air . . ."

• States' Rights

"States' rights are given the fullest protection consistent with necessary Federal control over interstate traffic and safety in air navigation" under his bill, McCarran said. "The States are given control of intrastate air carriers and intrastate air contractors. With respect to these two types of operations, States can exercise all the traditional powers which they have exercised in the public utility field."

"In the airport and airport zoning fields," the Senator added, "the bill provides specifically for a system of cooperation and mutual aid between States and Cities on all phases of aviation in which they have mutual interest."

• Civil Aeronautics Authority Re-created

A "Civil Aeronautics Authority," composed of seven members with staggered seven-year terms of office, is created as an independent Government agency. Not more than four Authority members could be from the same political party.

An Executive Officer to carry out the policies of the Authority is established under the bill. The Civil Aeronautics Board and the Civil Aeronautics Administration are abolished.

Of this proposed organization, McCarran observed:

"I sincerely believe that the new Authority . . . will make possible: (1) maximum efficiency in carrying out all aviation programs; (2) the creation of a real sense of public responsibility in members of the new Authority as no 'buck passing' is possible—they cannot escape responsibility for action or inaction; (3) elimination of duplication of functions, effort and personnel; (4) clarification of ambiguities and uncertainties to the end that the great amount of war work of the Authority can go forward with maximum speed."

• Surface Carriers

Declaring that "the air carrier industry is still in its infancy as compared to surface carriers, and the public interest would best be served by preventing surface carriers from gaining such control that they could stifle air transportation to prevent it from injuring their investment in surface carrier equipment or property," McCarran, in introducing his bill, commended the CAB for "properly" interpreting the language of the Civil Aeronautics Act of 1938 as barring surface carriers. His bill re-enforces that interpretation. "No good reason has yet been advanced for a change in this policy," the Senator declared.

• Experimental Certificates

"To open up the whole development of air transportation to new enterprise and keep it open for our returning soldiers, and to assure the greatest possible devel-

'Monopolistic Trend' Seen

Carleton Putnam, president of Chicago and Southern Air Lines, recently assailed the McCarran proposal for a monopoly of all postwar American international aviation by means of one big air combine as an evidence of "the ever-growing monopolistic trend of American aviation." The new field of postwar aviation must be kept open to the American people under the same standards of regulated competition that have inspired the growth of America's domestic air transport industry since its beginning, he declared.

Airlines May Get 30-40 More Planes

The Army is to return to the airlines for commercial use nine more airplanes and, if White House approval is obtained, the carriers may receive "a couple of dozen" more in the near future, it was learned last week.

Disposition of the nine airplanes will be handled by the Civil Aeronautics Board.

Addition of nine airplanes brings the airline fleet to 200. Two years ago President Roosevelt had stated that the fleet should not exceed that number. He is now being asked whether he has objection to a further increase, and if an increase is approved "a couple of dozen" planes will be returned immediately, with more to follow as the military situation permits.

opment of feeder lines for existing trunk-line operators," McCarran said, "the bill creates a new type of certificate of public convenience and necessity, known as an Experimental Certificate."

The new type certificate would be issued without the requirement of any proof other than of ability, including financial responsibility, to operate a new line and to comply with necessary safety regulations.

• Private Flyers

"The bill gives private flyers a new recognition and a 'Bill of Rights' which they have never had under previous Federal legislation," McCarran reported. "Private flyers are given specific assurance against interference by the Federal regulatory body . . . through a new section which prohibits the application to them of any provisions . . . other than those relating to safety. For the first time, private flyers are . . . specifically given the right to perform mechanical work on their own planes without securing a separate certificate from the Civil Aeronautics Authority . . ."

• Other Provisions

Air Safety Board. An "absolutely independent" Air Safety Board, composed of a panel of five air "safety experts" with six-year terms, is created.

National Airport Survey. A national airport survey to lay the foundation for necessary legislation in this field in the postwar period is directed.

Airport Zoning. Provisions of the bill are designed for cooperation between Federal, State and City Governments in formulating and carrying out a nation-wide program for the clearing and protection of aerial approaches to airports.

McCarran Proposal Opposed by Transport Group on Air Policy

ANNOUNCING OPPOSITION to the "monopolistic policy" expressed in the McCarran bill which would establish a "chosen instrument" for postwar U. S. foreign air operations, the Airlines Committee for U. S. Air Policy released last week a clarification of its original Declaration of Policy advocating competition in the foreign aviation field.

In a press statement accompanying the clarification, the Committee's chairman, S. J. Solomon, said that the 17 member airlines "are simply asking that, where economically justified, they be permitted to continue, in peace, some of the overseas routes they are now flying continuously in war."

The McCarran proposal "would destroy the very principles that have built this great air transport system that has proved so valuable in war," Solomon maintained. "That system was built on the traditional American policy of competition, intelligently regulated by appropriate Government agencies. This policy has worked with complete success in all other forms of American business since we became a nation." Text of the policy follows:

(1) Regulated competition offers the opportunity for more than one U. S. airline to compete in the international field but only those lines should be certified for operation in any one region as the public interest, the traffic potential, the postal service and national security may require.

(2) The airlines of the U. S. have proved their ability in war to fly anywhere in the world. Many desire to do so when peace is restored but they realize that the national interest must be paramount in determining the issuance of certificates of operation.

(3) The 17 airlines subscribed to the Declaration of Policy as being in the best interests of the United States and with the full realization that not all of them may be certified to fly overseas.

(4) The signatory airlines believe that there is no more practical reason to adopt the Government monopoly or chosen instrument theory of any other nation than it would be to adopt that nation's form of Government or any other internal policy of that nation.

(5) The term 'chosen instrument' is simply another name for monopoly. The terms are synonymous.

(6) The signatory airlines reaffirm their belief in their ability to compete successfully against 'chosen instruments' of foreign nations.

(7) In their joint Declaration of Policy opposing postwar overseas air monopoly, the 17 signatory airlines herewith give public assurance that they support the right of Pan-American Airways or other certified American flag trans-oceanic air carriers to continue operations as separate entities, and where adjudged by the proper authorities to be in the public interest, to expand those operations."

Canada's Postwar Air Policies Revealed

Will Separate Air and Rail Transport; Howe Urges International Authority

IMPORTANT disclosures of Canada's postwar domestic and international air policy were made Mar. 17 by C. D. Howe, Minister of Munitions and Supply, who told the House of Commons in Ottawa that the government (1) favors establishment of an international air transport authority to handle global air routes and (2) has decided that railroads shall not exercise any monopoly of air services.

In one of his most important statements on aviation (given four days after *American Aviation Daily* had revealed the Canadian proposal for an international air authority), Howe asserted that in the field of international aviation "the geographical position of Canada is one that demands that Canada be given an important place among the nation's of the world." He emphasized that Canada's interest lies in a "liberal course of cooperation with other nations."

Totally unexpected in most quarters was his revelation that steps will be taken to require railroads to divest themselves of ownership of airlines, so that within one year after close of the European war, air transport will be entirely separate from surface transport. Trans-Canada Air Lines, the government carrier now operated by Canadian National Railway, will be operated as a separate government company.

Howe, the "Mr. Big" of Canada's air transport, placed most of the blame for the necessity of the separation upon Canadian Pacific Railway Co., which operates, with one exception (Maritime Central Airways) all Canadian routes not flown by TCA. Howe insisted that Canadian Pacific had introduced competition into the picture, despite the government's desire to avoid competition. He left no doubt that, as far as the present government is concerned, TCA will operate all Canadian international routes.

In addition to favoring the international air transport authority, Howe's comments on the international situation included:

- Favoring the establishment of traffic rules, safety and navigational aids which would be as uniform as possible throughout the world, to be administered by an international authority.
- Granting general freedom of transit for international air services on a universal basis, so that national air services will automatically possess the right to cross the territory of other nations en route to their destinations, and to land in other countries for refueling and reserving without having to request the specific permission of each government concerned. This should be supervised by an authority.
- Extending freedom of air transit to cover as well a certain amount of freedom of carriage of goods and passengers, in order to enable all nations to share in a proportion of the international traffic available without having to go in for bilateral bargaining which so confused the prewar situation.

- Assuming the above point were adopted, each nation would at least possess the right to carry passengers and cargo from its own territory to other countries, and to bring back from those other countries passengers and cargo

which are intended for its own territory. Thus, aircraft would not only be hampered in movements across foreign territory, but nations would have a certain amount of traffic available to their own air services without the necessity of bilateral bargaining, thus increasing the chances of reasonable economic operation.

- To prevent a helter-skelter of airways developing, each country would designate the routes across its territory which airlines of other countries must follow, just as it does for its own domestic services.

Howe suggested that the international authority should not only supervise administration of the freedoms and rights listed above, but should also have power to regulate international air services in order to prevent the dangers of unnecessary and uneconomic duplication. "Some such method might be used as control of rates and schedules, and licensing. Because an authority, established on a uni-

(Turn page)

1st Photo of YO-60 Autogiro



This is the first photo to be released of the AAF's new YO-60 Autogiro, manufactured by Kellett Aircraft Corp., Philadelphia. Kellett has made delivery of a service test lot of these craft, which are being operated for tactical studies and instructional work. Note bubble-type canopy, providing better vision for the crew.

Canada to Build York

Canada has acquired the rights to build a plane that "is considered by our exports to be the probable best plane of the next five years at least," C. D. Howe, Minister of Munitions and Supply, told the House of Commons last fortnight. Although Howe did not mention the plane by name, it is said that he referred to the four-engined Avro York, transport version of the British Lancaster bomber.

"While the building of this airplane will be undertaken immediately, the plane will not be released to our airlines until new planes of similar type are released to domestic airlines in the United States," Howe said. "Therefore I think I can say that needed steps have been taken to protect Canadian air transport against its postwar plane requirements, and this by planes to be built in Canada. A vigorous airplane construction industry is an essential complement to Canada's postwar aviation plans."

Air-Rail Separation 'Radical Departure' CPR President Says

Intention of the Canadian government to separate rail and air transportation "involves a radical departure from the policies hitherto followed in Canada," D. C. Coleman, chairman and president of Canadian Pacific Railway Co., said, commenting on C. D. Howe's statement in the House of Commons (see adjoining columns).

Both Canadian railway companies engage in all types of transportation—rail, water, telegraph, airline, express, bus and truck, he pointed out, adding that CPR was authorized to engage in air service in its original act of incorporation.

CPR acquired a number of competing airlines after chaotic conditions had developed and after the Board of Transport Commissioners "apparently offered no satisfactory solution," he said. The company, he emphasized, acted with the "encouragement and approval of the government. Every step in this process has been taken with the full knowledge and approval of the authorities, and the company, in good faith, has invested a large sum of money which cannot be expected to yield any return for some time to come."

CPR, he said, "is a great national undertaking, though nominally the subject of private ownership . . .

"Presumably, legislation will be introduced to implement the statement of policy just made, and in the discussion and consideration of that legislation, any experience or information which the Canadian Pacific Air Lines has acquired in the course of its operations will be made available if required."

(Continued from preceding page)

versal basis, might have difficulty in giving due consideration to the special needs of particular regions, it would be desirable that it work through regional groupings or councils."

Cross-border services, such as those between the U. S. and Canada, should be considered in a special category "and dealt with specially by the two countries concerned, since services originating in the one country and terminating in the other are primarily trans-frontier extensions of domestic air services."

Discussing pre-war arrangements, Howe mentioned the agreement under which Imperial Airways and Pan American Airways were to operate reciprocal services, the agreement being made by the U. S., Canada, Ireland and Great Britain. "In view of the fact that the joint operating company (British) visaged in the 1935-36 agreement was never set up, and in view of the material changes in circumstances which have already taken place since the agreement was drawn up, the Canadian government is of the opinion that the agreement can no longer be considered applicable . . ."

He also discussed the present U. S.-Canada agreement which lists cross-border services to be operated by each country (one Canadian airline, TCA, operates to the U. S.; seven U. S. carriers operate to Canada).

'Fair Arrangement'

"Some persons have suggested that Canada came out of this bargain badly," he noted. "To this I would answer that having in mind the availability of planes and air facilities, it was a fair arrangement to meet the circumstances at the time. We can look forward to the further development and expansion of trans-frontier services between the two countries and may expect to see both Canadian and United States lines participating in this expansion in accordance with whatever arrangements may be agreed upon by the two governments."

He revealed that a wartime agreement, dated Jan. 26, 1944, had been concluded allowing Pan American Airways to operate over Canadian territory between Seattle and Juneau, Alaska. "In granting this permission," he emphasized, "the Canadian government informed the United States government that it proposed at a future date to take up the question of permission for a Canadian service to operate into Alaska."

Howe told the House that the U. S. Civil Aeronautics Board is now considering applications from U. S. companies for operations in Canada. He added, however, that "While the . . . Board may receive applications . . . and may find it expedient to decide which of these it would be desirable and necessary in the United States' interest to grant, any new services on a commercial basis between the two countries cannot be initiated without the consent of the two governments and any development of such new services will involve a reconsideration of the existing arrangements between the two. Canada does not consider applications from airlines of another country unless forwarded by the government of that country through diplomatic channels."

He summed things up as follows: "The briefest fashion in which I can describe the situation which will exist at the end of the war is that the position and sovereignty of the Canadian government have been protected completely in all arrangements that have been made; that special wartime arrangements will come to an end

Australian Civil Air Chief Visits U. S.



Daniel McVey, newly-named Director General of Civil Aviation in Australia, who also holds the post of Secretary of Aircraft Production, was in the U. S. recently and is on his way to London to study British aviation. Shown above, left to right, are J. L. Smith, director, Aircraft Division, Australian War Supplies Procurement; Roy M. Badenach, chief electrical engineer, Australian Department of Civil Aviation; McVey, and Charles I. Stanton, Administrator of the U. S. Civil Aeronautics Administration.

at or shortly after the conclusion of hostilities and developments during the war will create no vested interest in air transport or air facilities in Canada for any other government."

On the domestic situation, in addition to the air-rail separation, he revealed:

- Postwar traffic possibilities are being studied and "alternative plans are now being studied to determine a method of allocating these valuable franchises in the best interests of Canada, and of our returning airmen."

- It is proposed to establish an Air Transport Board to perform regulatory duties now lodged with the Board of Transport Commissioners, to examine needs for new services, establish tariffs, etc.

Discussing the air-rail situation, Howe said that Canadian Pacific Railway had been invited to participate in trans-Canada Air Lines, but had refused. Later, in the first year of the war, when small airlines found their traffic curtailed, Canadian Pacific bought them out.

Got New Planes

Construction of the Alaska Highway caused great activity in the territory served by Canadian Pacific Air Lines "and that company was assisted by the United States Army in obtaining new and modern airplanes, from United States sources, with the result that the equipment of the company was augmented considerably at a time when all other airlines on this continent found it impossible to buy new equipment."

The act creating TCA contemplated that this airline would operate, on a non-competitive basis, all routes parallel to the international boundary, as well as Canada's interest in all international routes, Howe said. It was felt, he added, that Canada could support only one transcontinental line and it seemed obvious that the cost of a non-competitive, non-profit service was the lowest that could be offered the public. "However, the newly-formed Canadian Pacific Airlines lost no time in challenging the non-competitive position of Trans-Canada Air

Lines, and in reaching out for new franchises; this at a time when it alone seemed to be able to buy new and modern equipment . . ."

"It is becoming obvious that ownership of airways by our two competing railway systems implies extension of railway competition into transport by air, regardless of the government's desire to avoid competition between air services."

The government, he said, desires rapid development of aviation to provide employment for returning RCAF personnel. Canada's northland was pioneered by small operators "who were content to enlarge their operations only as warranted by the development of the area they served. The government believes that feeder line operations and pioneer lines into our northland can best be developed as small operations. Our returning airmen will not be satisfied, in entering this new field of employment, to serve only as salaried employees; in this new medium of transportation there must be a place reserved for small business enterprise."

"Accordingly, after full consideration, the government has decided that the railways shall not exercise any monopoly of air services. Steps will be taken to require our railways to divest themselves of ownership of airlines, to the end that, within a period of one year from the ending of the European war, transport by air will be entirely separate from surface transportation. In the meantime, no new air routes other than government operated routes will be allocated to airlines owned by any railway or other operator of surface transportation. The term 'surface transportation' includes railways, shipping companies and highway transport companies."

"Therefore, it will be necessary to divorce Trans-Canada Air Lines from Canadian National Railways and operate the former as a government company. Canadian National Railways have given splendid administration to Trans-Canada Air Lines, and personally I regret the necessity for the separation."

American Airlines to Buy Control of American Export

Asks CAB Approval Of \$3,000,000 Deal For 51.4% of Stock

IN A DEAL which, if approved, will put the largest U. S. domestic airline into the trans-Atlantic aviation picture, American Airlines has asked the Civil Aeronautics Board to approve acquisition by it of control of American Export Airlines.

Under an agreement signed by A. N. Kemp, AA president, and W. H. Coverdale, head of American Export Lines Inc., American, through payment of \$3,000,000 for Export Airlines' treasury stock (money to be paid into the Export treasury) acquires a 51.4% interest in the trans-Atlantic airline.

As soon as CAB approval is obtained and additional equipment is available, "vigorous steps" will be taken for the further development of American Export's trans-Atlantic service, American announced. The \$3,000,000 will provide funds for the prompt development of Export in the international field, it added.

Means of Divestment

American Export asked approval of the plan also as a means of divestment of the steamship company control to comply with a CAB divestment order issued last year.

According to the agreement, American agrees that "following consummation of this agreement and subject to the approval of the Civil Aeronautics Board, as long as it retains control of Export Airlines it will engage in international air transportation, exclusive of operations in the North American continent including the Isthmus of Panama, only through Export Airlines. Similarly, Export Steamship agrees that . . . as long as it remains a stockholder of Export Airlines it will engage in air transportation only to the extent permitted through its minority stock interest in Export Airlines."

On July 15, 1940, President Roosevelt approved issuance to Export of a certificate for carriage of mail, passengers and property between New York and Lisbon, the certificate to continue in effect while operations were prohibited, under the Neutrality Act, to England, Ireland, France and Italy, and for 60 days thereafter, or, if Export filed within the 60 days for amendment to the certificate, it remained in effect until such time as Board action on the amendment had been completed.

On Nov. 28, 1941, Export asked amendment to its certificate to include an operation between New York and Foynes, and also requested that the New York-Lisbon route be made permanent. On Feb. 3, 1942, President Roosevelt approved a temporary wartime route for Export between New York and Foynes. Action on the Export request for permanent New York-Foynes and New York-Lisbon routes is still pending. Until final

action is taken by CAB, the temporary New York-Lisbon certificate remains effective."

During the war, Export has conducted extensive operations for the Navy. It has applications pending for two international trunk lines originating in Washington, New York, Boston and Chicago, one serving the British Isles, France and Mediterranean points, and terminating in Bombay; and the other with the same American terminal cities, set up primarily to serve Africa. The company has landing rights in Ireland and Italy and has permission to use Lisbon as a technical stop until June 1, 1944.

Insure Strong Position

Commenting on the deal, Kemp stated: "Export is already recognized as one of the two trans-Atlantic commercial air carriers flying the American flag, and we believe the consummation of this transaction upon receipt of government approval will be of material help in solving the international air problems of the United States and should insure a strong position for our country in the air."

Coverdale said: "By this agreement we believe our company complies fully with the order of the Civil Aeronautics Board calling for definite divestment of control of the airline by the steamship parent company. At the same time by retaining substantial minority holdings we reiterate full confidence in the soundness of our original concept in forming the airline subsidiary as well as confidence that the airline under American Airlines' control will have a great future."

According to an exhibit submitted to CAB, Export has \$1,510,321.57 of unamortized experimental and development costs. A footnote explains that "the company has made no provision for amortization of unamortized experimental and development costs during the period, but states that it intends to amortize experi-

House Group Recommends \$228,375,000 for Naval Aviation Shore Facilities

Legislation authorizing the Navy \$228,375,000 for aviation shore facilities to keep astride of its 37,735-plane program for the 1945 fiscal year was recommended by the House Naval Affairs Committee during the fortnight.

In the main, the authorization provides for expansion at existing Naval aviation shore installations used to support fleet and sea frontier forces and for training purposes.

Air station expansions approved are: North Atlantic area, \$19,225,000; Middle Atlantic area, \$28,625,000; South Atlantic area, \$7,410,000; Gulf area, \$3,900,000; Southern West Coast area, \$55,700,000; Northern West Coast area, \$18,500,000; Central West Coast area, \$35,350,000. Funds authorized for training station expansions cover: primary training stations, \$3,940,000; intermediate stations, \$3,460,000; operational training stations, \$10,365,000.

mental and development costs beginning six months after the termination of the present national emergency on the basis of a percentage of passenger and express revenues."

The application to CAB reveals that American bought 120,000 shares, or approximately 51.4% of a total of not to exceed 233,331 5/9 shares of the capital stock of Export Airlines to be issued and outstanding upon the performance of the terms of the agreement.

Under the terms of a warranty agreement, Export Airlines represents that there is now outstanding of its 1,000,000 shares (\$3-par value) of authorized capital stock 80,526 shares, and capital stock warrants entitling the holders to purchase an aggregate total of 32,805 5-9 shares making a total of 113,331 5-9 shares either issued or reserved for the exercise of the stock purchase warrants.

American Export Lines, Inc., the steamship company, represents and warrants to American that it is the owner and holder of 56,000 shares of the capital stock of Export Airlines out of the aggregate total of 80,526 shares of said capital stock issued and outstanding. It further represents that it has issued and outstanding 5,905 shares of its cumulative preferred stock with accompanying non-detachable capital stock purchase warrants of Export Airlines.

\$548,069 Assets

The steamship company guarantees to American Airlines that the net current assets as of Dec. 31, 1943, were not less than \$548,069, and that it will make good to Export Airlines any deficiency below that amount by reason of any claims or adjustments arising prior to Jan. 1, 1949 but resulting from transactions of Export Airlines occurring prior to Dec. 31, 1943, provided that Export Airlines shall, after the closing date, use its best efforts to minimize or avoid such deficiency.

The agreement sets forth the usual prohibitions with reference to new commitments by Export Airlines as to changes in property or personnel, increasing their compensation, canceling or modifying franchises, licenses or contracts. Export Airlines also agrees not to pay any dividends in cash, stock or otherwise, nor make any major purchases or sales of assets during the pendency of the agreement.

Export Steamship and Export Airlines further agreed that all shares of the preferred stock of the Export Steamship acquired by Export Airlines in payment for its capital stock issued pursuant to the exercise of attached warrants shall, as promptly as possible after their acquisition, be delivered by Export Airlines to Export Steamship and shall be received in part settlement of the indebtedness of Export Airlines to Export Steamship at the rate of \$100 per share for each share of the preferred stock of Export Steamship so delivered.

Export Steamship agreed to take corporate action to provide that a majority of the members of the Board of Directors of Export Airlines in office shall consist of persons nominated and designated in writing by American Airlines and that resignations will be tendered by such officers of Export Airlines as may be designated in writing by American Airlines for the purpose of assuming American Airlines control of the policies and operations of Export Airlines.

Surplus Inventory Move To Save Firms From Big Losses

By CLIFFORD GUEST

FIRST STEPS in a move to save aircraft manufacturers from taking tremendous losses on unusable surplus materials which have accumulated in plants and warehouses to enormous proportions as a result of changes and improvements in plane models were taken last week by the Aircraft Production Board.

Charles E. Wilson, chairman of the board, urged all manufacturers to begin immediately the actual physical segregation and inventory of all surplus materials, cautioning them that inventory errors may actually "wash out" individual companies if they are caught with large surpluses when the war ends.

Meanwhile, the Federal Surplus Property Administration under the direction of William L. Clayton was moving toward specific procedures for the sale of surpluses. In a report to top-drawer War Production Board officials Clayton urged that surplus materials must be moved into the market immediately and that to accomplish this end, expansion of their use is necessary. He recommended that regional offices be authorized to implement the movement of surpluses and it was indicated that Col. Charles R. Baxter, formerly redistribution division director of WPB, would become the key man in this program.

The seriousness of the surplus materials situation has been repeatedly pointed up by the Aircraft War Production Council, with Henry Nelson, the Council's materials coordinator, devoting a large part of his time to it.

According to figures given APB, it was found that one of the larger aircraft firms has on hand unusable materials valued at \$45,000,000. The industry recently has joined in concerted efforts to get such materials into market channels to avoid a chaotic condition when the war production program lets down.

Among recent additions to the staff of the Surplus Property Administrator who will be concerned with the problem are: deputy administrator, G. Temple Bridgeman, executive vice president of Metals Reserve Co.; general counsel, Stuart Scott, member of Root, Clark, Buckner & Ballantine, New York law firm; executive assistant, Col. Joseph P. Woodlock, loaned by the Army; secretary to the policy board, John B. McNamara, loaned by Treasury.

L. Welch Pogue, chairman of the Civil Aeronautics Board, will represent CAB on the Surplus Property Policy Board, and Maj. Gen. Lucius D. Clay will represent the War Dept., but so far no one has been named from the Army Air Forces.

The foresight of Ralph S. Damon, vice president and general manager of American Airlines, in spotlighting as far back as last September the situation which the manufacturers now face, was given



Damon

special credit by Wilson in his letter to the aircraft firms.

Testifying at the House Ways and Means Committee hearings on renegotiation in September, Damon said in part: "I should like to discuss just one reason why the so-called 'profits' are not profits. It is because they have been reinvested in inventories . . . in metals, aircraft parts, partially and wholly completed pieces, which, when put together, constitute our fighting planes. The question, therefore, is 'What is going to happen to these inventories when the war ends?' . . . It is possible that because of the eventual shrinkage in the value of our inventories, we shall come out of the war with a net loss."

Wilson's letter to the manufacturers said in part:

"The aircraft industry is in a very favorable position to dispose of its surplus materials because the overall program is still increasing. On the other hand, markets will be more difficult to find for our special 'aircraft quality' materials when the program is cut off."

"The importance of knowing your exact inventory position and of clearing the decks of excess materials cannot be

Avro York Plane Tested

The new Avro York transport plane has been taken on a test flight to the West African tropics by General Alfred Cecil Critchley, director general of the British Overseas Airways Corp. Main purpose of the test is said to be to determine how the plane's four engines stand up to the tropical conditions. General Critchley will also make a survey of terminal and jumping-off arrangements for prospective British airlines to South America.

overemphasized. The report *'If We Are Going to Master the Air'* presented by Mr. Ralph Damon at the House Ways and Means Committee hearings on renegotiation on Sept. 16, 1943, indicates the precarious financial position of the industry and points up the fact that inventory errors may wash out individual companies . . .

"It is believed that a physical inventory, segregation of idle surplus material and records of same are necessary before good sales results can be obtained.

"Recent observations, confirmed by representatives of the aircraft industry at a meeting held in Dayton, show that those companies who have already started on a physical segregation of idle surplus materials have been able to do a much more effective redistribution job.

"Although many plans for disposal of idle surplus materials have been developed, the activation of such plans may be too far distant to take advantage of present production markets. Regardless of any new procedure which might be developed as a result of the Baruch report, an actual segregation of surplus materials will not be wasted effort nor call for duplication of work. It must be the starting point in any sales effort."

CAA Economist Foresees a Million Lightplanes, Helicopters by 1960

A prediction that 1,000,000 lightplanes and helicopters will be in use by 1960, that the bulk of express types of shipment will be carried by air and that by 1955 the standard or usual means of travel over substantial distances will be by plane was made by Martin Taitel, Economic Consultant of the Civil Aeronautics Administration, last fortnight.

Speaking before the District of Columbia Society of the Sons of the American Revolution, Taitel further predicted:

(1) By 1948, new and more efficient fixed-wing aircraft will begin to appear; (2) By 1948, very extensive transoceanic routes will be established; (3) By 1948, passenger and express rates will have started their postwar downward trend; (4) By 1950, a practical helicopter for personal use will be available; (5) By 1950, mail by air without surcharge will be the usual method, except for short distances; (6) By 1950, an air parcel post will have been established; (7) By 1955, large quantities of perishables will go by air.

Before making these predictions, Taitel went back to the opening of the automobile era when, what he termed the "under-guestimators", were basing their estimates of the use of the automobile on horse and buggy calculations of that day.

"The difficulty with the under-guestimator's attitude lies in the assumption that there is going to be very little new

in the future," Taitel said. "And so they figure the main expansion of air traffic will represent a diversion from surface traffic. And they further figure that the total diversion, primarily for reasons of higher cost, but also for reasons of lower utility, can only amount to a very small fraction of all traffic."

"I stress the erroneous nature of this thinking because I believe our thinking about future possibilities has very practical results. The course of human development rests on ideas of what is possible and of what is worth doing. We cannot gain grand objectives unless we can first conceive of them," he declared.

Taitel asserted that in the transoceanic field, the most heavily travelled and most important route will be from our northeastern seacoast to Western Europe—distances of about 3,500 miles and up. On the Pacific side our most important route will run from our West Coast to the Japanese Islands and Asiatic mainland—distances of about 5,000 miles and up.

"But the traffic over this route, important as it may be, will be small compared to the North Atlantic run. So far as transpolar routes go, it is quite clear that only light traffic potentials exist," he stated.

Taitel analyzed the various factors that will have an important place in the development of postwar aviation and said that CAA is today making plans to help realize the maximum opportunities of an air age.

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ILLUSTRATION EMERSON ELECTRIC NOSE TURRET ON A B24 LIBERATOR BOMBER
(Photo Illustration courtesy Michigan Seamless Tube Co.)

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Martin Gives Details On JRM-1; Different From Original 'Mars'

The production version of the Martin Mars, known as the JRM-1, differs from the prototype now in service in the Pacific in several respects, the Glenn L. Martin Co. reveals. The 20 planes now being built for the Naval Air Transport Service at Baltimore will have a single rudder tail instead of twin rudder tail. The bow and second step will be lengthened by four feet to provide added cargo space and both main and rear cargo hatches will be enlarged and redesigned.

Inside, the hull has been stripped of shower baths, pressurizing equipment, mess tables and lounges. One bulkhead has been removed completely, and frames with openings wide enough to permit the passage of jeeps, field guns, and aircraft engines have been substituted for the remaining bulkheads on the main cargo deck.

The number of bunks has been reduced from 36 to eight, four of which are located on the flight deck in the space formerly occupied by the pilot's lounge, and four on the upper rear deck, just aft of the auxiliary power plant compartment.

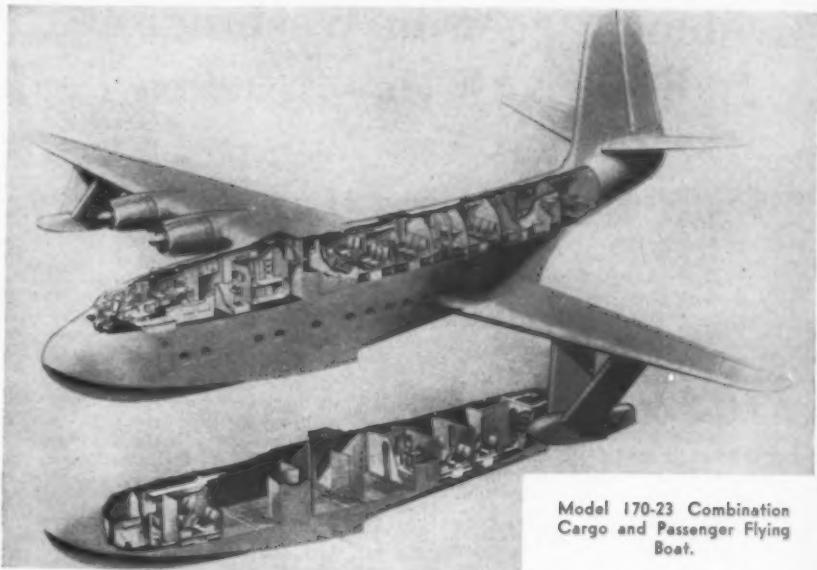
New equipment includes more than a ton and a half of tiedown fittings, skid strips and engine dolly tracks, a 5,000 pound capacity cargo hoist on an overhead track running out on both wings, and a stairway to the upper rear deck to permit its use for litter cases. It has built-in fittings for instant conversion into a hospital ship, a passenger transport, or a troop carrier. In the first category it will accommodate 84 litter cases with 25 attendants; in the second, 50 passengers in reclining chairs, all on the lower deck; and in the third, 132 troops all seated. As a cargo carrier, the JRM-1 will have ample space for seven jeeps and even greater numbers of field guns or aircraft engines.

Four cargo hatches are provided for loading as against three in the prototype. There are two main hatches, one under each wing, 99 inches wide and 92 inches tall. Each of these hatches is closed by vertically divided doors opening outward. The two aft cargo hatches are located on either side of the airplane just forward of the second step. They provide openings 50 inches wide by 62 inches high and have doors which slide up inside the hull when open. Immediately above the aft hatches are trap doors 50 inches wide by 24 inches deep for loading density cargo onto the upper deck.

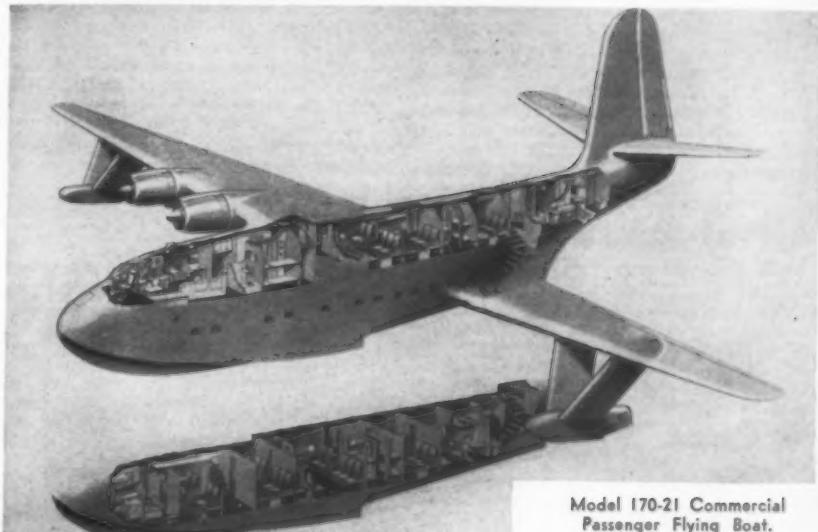
Compared to the highly compartmented Mars with its many bulkheads and 20-inch bulkhead doors, provisions which were of utmost importance to its originally intended use as a patrol bomber, the interior of the JRM-1 resembles a vast and spacious warehouse.

The main cargo deck has a plywood floor with a built-in grid of 3,000 pounds capacity tie-down fittings running both fore and aft and athwart ships on 30-inch centers. The floor is also fitted with metal skid strips for sliding heavy cargo and aluminum alloy tracks both fore and aft and athwart ships for handling engine transportation dollies. Additional light is let into the interior of the hull by the addition of five extra port-holes on each side.

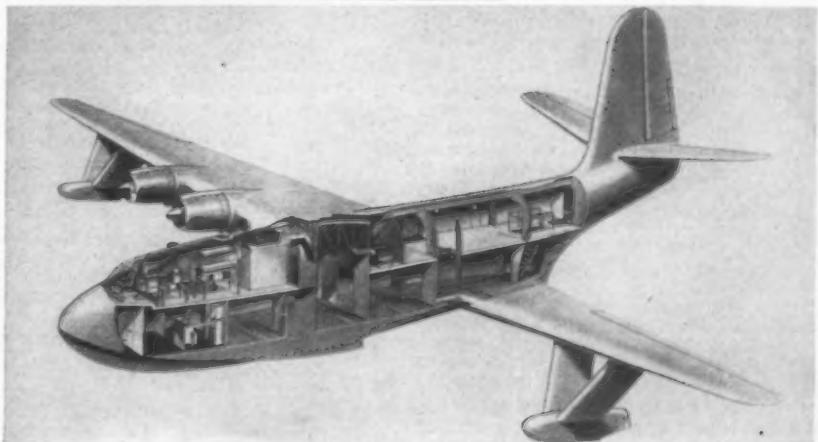
The new version has been designed to fly at weights up to 145,000 pounds as



Model 170-23 Combination Cargo and Passenger Flying Boat.



Model 170-21 Commercial Passenger Flying Boat.



Model 170-22—Commercial Cargo Flying Boat

compared to a design weight of 140,000 pounds for the prototype. The first airplanes of the new contract, expected to be ready early next year, will be powered

with four 2,200 horsepower Wright Cyclone engines, but the design provides for a switch to larger and more powerful engines when they are available.

Evidences Seen in Washington That AAF Has Reached Peak

By BARBARA B. C. McNAMEE

THE ARMY AIR FORCES has reached its maximum strength, it was increasingly evident in Washington during the past two weeks. It was substantiated both by the transfer of 36,000 aviation cadets to the Army Ground Forces and by the announcement that courses for both fighter and bomber pilots will be lengthened by five to nine weeks.

Gen. H. H. Arnold, AAF chief, announced last week that planned requirements for air force personnel have been reduced because casualties have been fewer than expected. General Marshall, at the same time, stated that despite the return of the men to the ground forces, the AAF's need for picked young men will continue, although enlistment of 17-year-olds in the air corps enlisted reserve has been temporarily suspended. He declared that the air forces were approaching complete air supremacy in virtually every area in which they are in operation at a much faster rate than the Army had expected.

Most significant change in the training course for Army aviation cadets appears to be the addition of a transitional course for fighter pilots similar to that given for bomber pilots.

In an announcement on March 19, the AAF Training Command at Fort Worth, Tex., stated that each of the four periods (pre-flight, primary, basic and advanced training) required to complete the curricula for all pilots has been increased to 10 weeks from nine weeks. In addition, a new five weeks' transition course has been established for fighter pilots, while the nine weeks of transition training given to bomber pilots in the two or four engine specialized schools have been stretched to 10 weeks.

With the exception of the new transition course for fighter pilots, AAFTC stated, the revised schedule is the same as that employed before Pearl Harbor. The heavy demand for pilots after Pearl Harbor required a reduction in the training periods from ten to nine weeks each in order to meet the demands of all theaters.

Under the new set-up the fighter pilot receives his wings and commission and a 10-day leave. He then returns to the school for the five weeks' transitional course, which includes 20 hours of fixed gunnery training in the advanced single engine plane, 10 hours of actual logged flying time on the P-40 and advanced ground instruction in weather, navigation, maintenance and related subjects.

Civil Aviation Committee Drafts Set of Principles

EIGHT MAJOR American aviation groups, which make up the Civil Aviation Joint Legislative Committee, have drafted a statement of principles which, they believe, should be included in Federal legislation now being considered by Congress.

The statement is being referred to the Aeronautical Law Committee of the American Bar Association with the request that a bill be drawn up based upon it, or that amendments be prepared to bring pending legislation into conformity with these principles.

The Joint Committee is composed of representatives of the Aeronautical Chamber of Commerce of America, the American Association of Airport Executives, the Aviation Distributors and Manufacturers Association, the Early Birds, Aviation Insurance Groups, the National Aeronautic Association, the National Association of State Aviation Officials and the National Aviation Trades Association. William P. MacCracken, Jr., of Washington, D. C., is chairman.

The statement is of particular interest because three comprehensive aviation codes, differing in many important provisions, have been proposed to this session of Congress—the Lea, Reese, and McCarran bills.

The Joint Committee has also adopted a resolution recommending that sales of surplus materials by military agencies be stopped until an overall national policy is determined.

The statement of principles follows:

"The air space of the United States and

its territories should be made available for use by all citizens with only such restrictions as are necessary for safety requirements, National Defense, and the sound economic development of Interstate and Foreign Air Commerce.

● Airports

"The Federal Authority shall have power to make recommendations with respect to the aeronautical characteristics of airports and to make safety regulations pertaining to the construction, maintenance and in-flight operation on and off airports used in interstate scheduled air transport, but on airports constructed or maintained in whole or in part by public funds such regulations shall make reasonable provision for the use of airport facilities by private and non-scheduled aircraft. Zoning question shall be left to the States.

● Air Contractors

"There should be clear cut distinction between scheduled and non-scheduled carriers. The non-scheduled carriers should be subject to a minimum of regulation consistent with safety, but not to economic regulation.

● Government Training

"The direct training of civilian pilots, technicians and mechanics is not the function of government, and therefore should not be entered into by government in competition with private enterprise. Federal funds appropriated for this purpose should be expended under contract with private enterprise.

Aviation Course at U. of C.

A special feature of the University of Chicago Workshop this summer will be a section on Aviation Education. Participants, in addition to receiving help and counsel from aviation consultants, will see films and have access to much new material pertaining to aviation, the university announces. A limited number of scholarships, paying either full or half tuition, are available.

At the same time the Training Command announced that an order effective March 3 stopped transfers from the Army Ground Forces and Service Forces to the Air Forces. Applications from enlisted men in the Air Forces for training as pilots, bombardiers or navigators will also be disapproved, except in the cases of aerial gunners who have returned from overseas after completing their quota of combat missions.

An additional administrative change was revealed recently when the War Dept. stated that AAF schools at Miami Beach, Fla., for the training of officer candidates, pre-flight cadets and basic soldiers will be transferred to the San Antonio Cadet Center and Sheppard Field, Tex. With the peak of the training program past, Army-owned installations are now available to absorb the present numbers of men entering the AAF, it was said.

The 20,000 officers and men in training at Miami Beach will complete their present courses but the full shift of the program is expected to reach completion by mid-summer. The War Dept. pointed out that the transfer is made possible primarily because the increasing number of trained AAF personnel being moved overseas has made Army-owned facilities available.

Miami Beach will continue to be the site for operations of the Air Transport Command, AAF Redistribution Station No. 2 and the Rehabilitation and Convalescent Training Center.

● Powers of the Administrator

"The independence of the administrative agency should be restored, making it responsible for the development and regulation of civil aviation, as an agency of the Congress. Powers of the commission and the administrator should be limited and all orders and regulations of the commission and administrator should be promulgated or entered only after due notice and hearing and should be subject to judicial review. Jurisdiction of the Federal Administrative agency should be clearly defined so as to avoid unnecessary duplication and conflict between state and federal regulation of civil aviation, leaving all operations that are intrastate to the jurisdiction of the several states."

● Taxation

Taxation of aircraft should not be the subject of Federal Legislation.

● Safety

Authority to promulgate air-safety regulations should be vested in a Federal Administrative agency. The power to investigate air accidents should be vested in an independent Board or Administrator.

● Insurance

Aviation Insurance has no place whatsoever in Federal Legislation.

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• TUCSON

Douglas

EL PASO

OKLAHOMA CITY

WICHITA FALLS

LUBBOCK

BIG SPRING

MIDLAND

SAN ANTONIO*

MONTERREY*

MEXICO CITY*

MINNEAPOLIS • ST. PAUL
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TULSA • FORT SMITH • LITTLE ROCK • TEXARKANA • MEMPHIS • JOHNSON CITY • KNOXVILLE • CHARLOTTE • COLUMBIA
• NEW ORLEANS
• MIAMI

AMERICAN AIRLINES Inc.

• U. S. Cities now on American's routes: 71

• U. S. Cities on American's proposed new routes: 50

121

Postwar Plan of American Airlines

TODAY American Airlines operates 8,365 miles of airways throughout the United States and into Canada and Mexico. We have filed applications for authority to operate 5,322 additional miles within the U. S. and 3,419 miles to Europe. The air-map above shows the cities which American Airlines now serves and seeks to serve. This is our present plan, but we believe that the public interest will require American to serve more cities.

This is our contribution to the network of air-service that is indispensable to the future growth, prosperity and protection of our nation.

Every city in our land must do business with many other cities all over our three million square miles. That calls for transportation of people, mail, merchandise and materials of many kinds. The

swifter and more flexible the transportation facilities, the closer together we become, and the more effectively we can work together.

In this war, our Airlines, cooperating with the Army Air Transport Command and the Naval Air Transport Service, are circling the globe with daily flights over arctics, jungles, oceans and deserts. What *they* are doing is the blueprint for *your* new world. It stems from the fact that air is universal, available to everyone, everywhere, alike, and it is our purpose to meet our air demand.

There is no pessimism among those who are thinking in terms of *air* transportation for the future. They see more new prosperity and more achievements of all kinds than were ever possible before.

THE NATIONAL AND INTERNATIONAL **AMERICAN AIRLINES Inc.** ROUTE OF THE FLAGSHIPS

SEC Lists Industry's Low Profits in '42

By WILLIAM THOMPSON

A SURVEY of 34 aircraft and aircraft equipment manufacturers by the Securities and Exchange Commission, covering 1942, discloses that America's No. 1 industry operated at a lower profit margin than any other major manufacturing group. A profit of only 2.6% on sales of aircraft was realized by the industry during the year, while rubber earned 3.5%; railroad equipment, 3.6%; electrical equipment, 4.1%; industrial machinery, 5.3%; and agricultural machinery, 6.1%, said SEC.

First reports on the survey highlighted the industry's net profit in percentage of net worth, an injustice to the aircraft group because of the great expansion it was called upon to make in order to build America's airpower for war. Noting this, the Aeronautical Chamber of Commerce

promptly issued the following statement:

"The true measure of the aircraft industry's profit level is the return on sales volume. Use of net worth as a yardstick for profits is unjustified in the aircraft industry in view of the tremendous expansion made necessary by military requirements. Practically all manufacturers in the aircraft industry started with small capital and the enormous growth of output of war planes is a tribute to management's skill and know-how."

"The aircraft industry deserves credit for the huge responsibilities of production which it has carried out successfully with relatively small capital. The typical aircraft company has been drained of working capital through greatly expanded operations, but its responsibilities and risks are continuing. The industry's

small profit margin must be maintained if it is to survive after the war and fulfill its peacetime obligations to the nation."

"Net worth," as outlined in the official text of the report, "is the amount reported by registrants as of the beginning of each period covered and includes preferred and common stock, i.e., all equity securities and surplus, capital surplus, and unsegregated surplus. Whenever a registrant indicated it considered a reserve as part of surplus it was so included."

The survey allowed for renegotiation where it had been completed up to October, 1943, and a report filed. American Aviation has compiled the following table, based on the report, with detailed footnotes showing whether or not renegotiation was included:

Company	As of—	Net Sales	Net Profit Before Income Taxes		Net Profit After Income Taxes		Net Profit Before Income Taxes As a Percent of Worth	Net Profit After Income Taxes As a Percent of Worth
			Amount	Percent of Sales	Amount	Percent of Sales		
Air Associates, Inc.	Sept. 30	\$14,397,000 ¹	\$1,233,000	8.6	\$ 448,000	3.1	77.1	28.0
Aircraft Accessories Corp.	April 30	4,713,000 ²	728,000	15.4	266,000	5.6	175.8	64.3
Aviation Corp., The	Nov. 30	45,531,000 ³	11,224,000	24.7	4,724,000	10.4	55.1	23.2
Beech Aircraft Corp.	Sept. 30	52,393,000 ⁴	8,897,000	17.0	2,418,000	4.6	563.1	153.0
Bell Aircraft Corp.	Dec. 31	130,763,000 ⁵	21,954,000	16.8	4,204,000	3.2	403.7	77.3
Bellanca Aircraft Corp.	Dec. 31	3,855,000 ⁶	966,000	25.1	691,000	17.9	200.8	143.7
Boeing Airplane Co.	Dec. 31	390,109,000 ⁷	31,768,000	8.1	5,238,000 ^{7a}	1.3	200.3	33.0
Breeze Corporations, Inc.	Dec. 31	29,199,000 ⁸	4,639,000	15.9	1,280,000	4.4	152.7	42.1
Brewster Aeronautical Corp.	Dec. 31	60,131,000 ⁹	—1,436,000	—2.4	—1,436,000	—2.4	—58.6	—58.6
Cessna Aircraft Co.	Sept. 30	31,921,000 ¹⁰	5,213,000	16.3	516,000	1.6	432.6	42.8
Consolidated Aircraft Corp.	Nov. 30	304,014,000 ¹¹	53,449,000 ¹¹	17.6 ¹¹	10,814,000 ¹¹	3.6 ¹¹	578.3 ¹¹	117.6 ¹¹
Curtiss-Wright Corp.	Dec. 31	770,595,000 ¹²	89,524,000	11.6	13,144,000	1.7	147.4	21.6
Douglas Aircraft Co., Inc.	Nov. 30	501,782,000 ¹³	45,255,000	9.0	11,055,000	2.2	127.0	31.0
Fairchild Aviation Corp.	Dec. 31	17,334,000 ¹⁴	3,941,000	22.7	926,000	5.3	175.4	41.2
Fairchild Eng. & Air. Corp.	Dec. 31	47,080,000 ¹⁵	3,852,000	8.2	627,000	1.3	158.5	25.8
Grumman Aircraft Eng. Corp.	Dec. 31	136,021,000 ¹⁶	10,412,000	7.7	1,336,000	1.0	318.6	40.9
Irving Air Chute Co., Inc.	Dec. 31	6,418,000 ¹⁷	841,000	13.1	317,000	4.9	83.6	31.5
Jacobs Aircraft Engine Co.	Dec. 31	32,585,000 ¹⁸	11,478,000	35.2	2,961,000	9.1	679.2	175.2
Lockheed Aircraft Corp.	Dec. 31	444,660,000 ¹⁹	49,680,000	11.2	8,148,000	1.8	231.5	38.0
Martin, The Glenn L. Co.	Dec. 31	337,556,000 ²⁰	34,328,000	10.2	6,659,000	2.0	145.2	28.2
Menasco Manufacturing Co.	June 30	4,870,000 ²¹	1,061,000	21.8	335,000	6.9	102.9	32.5
North Am. Aviation, Inc.	Sept. 30	242,595,000 ²²	43,179,000	17.8	10,436,000	4.3	272.1	65.8
Northrop Aircraft, Inc.	July 31	32,984,000 ²³	7,595,000	23.0	3,045,000	9.2	...	...
Republic Aviation Corp. I.	Dec. 31	17,702,000 ²⁴	2,526,000	14.3	1,105,000	...	177.2	35.7
Ryan Aeronautical Co.	Oct. 31	8,553,000	685,000	8.0	280,000	3.3	60.9	24.9
Solar Aircraft Co.	Apr. 30	216,383,000 ²⁵	29,058,000	13.4	5,778,000	2.7	133.1	26.5
Sperry Corporation, The	Dec. 31	11,335,000 ²⁶	1,550,000	13.7	453,000	4.0	98.5	28.8
Steel Products Eng. Co.	Dec. 31	519,420,000 ²⁷	58,560,000	11.3	17,097,000	3.3	147.6	43.1
United Aircraft Corp.	Dec. 31	17,851,000 ²⁸	5,328,000	29.8	1,378,000	7.7	246.2	63.7
Vultee Aircraft, Inc.	Nov. 30	109,773,000 ²⁹	26,109,000	23.8	4,553,000	4.1	271.2	47.3
Waco Aircraft Co.	Sept. 30	2,160,000 ³⁰	255,000	11.8	114,000	5.3	29.9	13.4
Warner Aircraft Corp.	Dec. 31	2,943,000 ³¹	322,000	10.9	87,000	3.0	35.0	9.4
Wright Aeronautical Corp.	Dec. 31	449,546,000 ³²	54,902,000	12.2	8,905,000	2.0	245.0	39.7

1. "Since no excessive profits were found to have been realized by the company, a Renegotiation Agreement dated June 25, 1943 had no effect on the financial statement for the fiscal year ended Sept. 30, 1942."

2. The company's contracts covering U. S. Government business are subject to renegotiation, however, no provision has been made.

3. The company's contracts covering U. S. Government business are subject to renegotiation. The company has made no provision for a reduction in price; the matter is still under negotiation with the Price Adjustment Board and it is impossible to determine at this time the eventual results of the renegotiation proceedings.

4. The company has set up a "Provision for Refund on U. S. Government Contracts" of \$7,200,000, which has been deducted from "Net Sales". The registrant states that it is impossible to determine the eventual results of the renegotiation proceedings at this time.

5. The company's contracts are subject to renegotiation, however, no provision has been made. The registrant states "the result of renegotiation may have a material adverse effect on the amount of profit for the year . . . but it is impossible to estimate the effect at this time."

6. The company's contracts covering U. S. Government business are subject to renegotiation, however, no provision has been made. Excludes "cost-plus-fixed-fee contract." The profit from "cost-plus-fixed-fee contract," \$31,000, is included by the registrant as "Other Income".

7. Includes "sales of engineering and other information and manufacturing rights", \$3,317,000 in 1941 and \$3,542,000 in 1942. As a result

of a change in the method of accounting for such sales from "amount billed" in 1941 to "amount contracted" in 1942, "Net Profit after Income Taxes" was increased \$127,000 in 1942. "Net Sales" after deduction of (a) Contract Price Adjustments (amount not stated), and (b) an additional "Provision for Refund to the U. S. Government on account of Renegotiation of Profits under Federal Law," \$9,300,000 (based upon a tentative agreement with the War Department).

7a. (Same as first two sentences of 7.)

8. After deduction of \$9,500,000 due to price renegotiation.

9. In 1941 and 1942 Net Sales are presented as "Net Sales at fixed prices and amounts reimbursable under cost-plus-fixed-fee contracts, including pro rata portion of fee". "Sales under fixed price contracts are recorded as units are delivered. Amounts reimbursable under cost-plus-fixed-fee contracts (including applicable fees) are recorded as expenditures are made or accrued." The company's contracts covering U. S. Government business are subject to renegotiation, however, no provision has been made.

10. As a result of the completion of renegotiation proceedings, the registrant has submitted additional data showing the effect upon the financial data previously submitted. Adjusted figures are presented for "Sales", "Net Profit before Income Taxes", and "Net Profit after Income Taxes", previously reported as \$37,589,000, \$6,081,000, and \$738,000, respectively.

11. After deduction of "Voluntary refunds, price reductions, etc. to the Government" under renegotiation agreement, \$19,000,000. A further

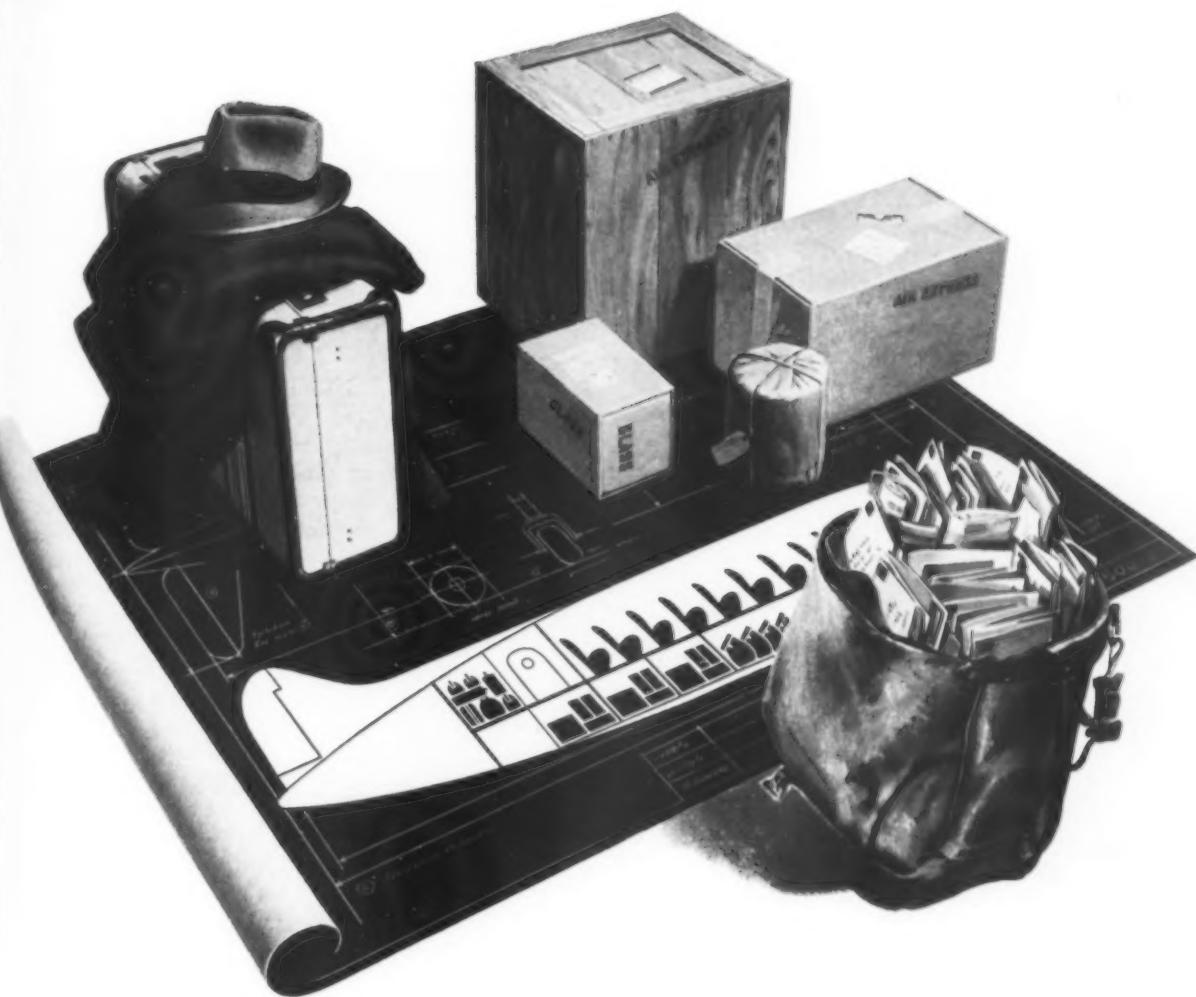
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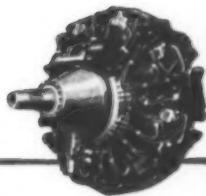
Let's be realistic. Many have prophesied, ourselves included, the future vastness of air transportation. The industry well knows its great possibilities. But the most pressing problem in aviation will be to make sure that *all* transports, large and small, fly full.

The full transport is the key to expansion because it provides that margin of profit which makes possible reduced rates—and, in turn, more business. First class mail by air, the opening up of new cargo possibilities, the establishment of

feeder service, faster schedules and more economical operation are goals which will provide increased public usefulness and acceptance. All are within reach and can be made actualities of the near future.

As an engine manufacturer, our contribution is operating economy. The aircraft designer can rely on Wright engines to operate on less fuel and cost less for maintenance. And because they weigh less than comparable powerplants, they provide a profitable payload bonus.

Wright Cyclones pay their way.



Cyclones Save 3 Ways

LESS WEIGHT—MORE PAYLOAD
LOWER FUEL CONSUMPTION
REDUCED MAINTENANCE

WRIGHT
Aircraft Engines

*"We at Colonial Value a Pound
Saved on a Plane at \$400.00"*

SAYS SIGMUND JANAS,
PRESIDENT, COLONIAL AIRLINES, INC.



BOOTS NUTS SAVE UP TO 60 LBS. PER PLANE

- Much lighter but tougher than other nuts.
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- Can be used over and over without the accelerated locking loss of other nuts.
- "Outlast the plane."
- Approved by all government aviation agencies.

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"They Fly With Their Boots On—Lighter!"

Boots Aircraft Nut Corporation, General Offices, New Canaan, Conn., Dept. G

AIRPLANE manufacturers are keeping a constant look-out for practical means of reducing the empty weight of aircraft. One example of this is the uncamouflaged Boeing Flying Fortresses, now being delivered without war paint in accordance with the War Department's recent directive. This change lightens each big bomber by some 60 pounds, adds several miles per-hour speed. All this cannot be measured in terms of money. But on commercial planes, weight saved and increased revenue are synonymous. Here at Colonial Airlines, we estimate that every pound saved is worth \$400.00 throughout the first five years of the life of a plane."

SEND FOR BOOTS WEIGHT-SAVING BOOKLET TODAY

Comparative weights of various types of self-locking nuts comprehensively reviewed for the convenience of aircraft designers, engineers, operating and maintenance personnel. Copy will be sent you, free, upon request.

WING-STYLE NUTS —IN CHANNEL

This is one type of the famous Boots All-Metal Self-Locking Nuts—set in straight or curved channel for speed in assembly.



proposal by the Price Adjustment Board for a reduction of approximately \$24,500,000 in excess of this amount was not acceptable to the company. If accepted, "Net Profit After Income Taxes" would have been decreased by approximately \$6,000,000. The Price Adjustment Board having withdrawn this proposal, no provision has been made for any part of the possible reduction in net income.

12. After deduction of "Voluntary price reductions (amount not stated), the unpaid balance of which at Dec. 31, 1942 together with the amount payable under renegotiation is expressed in the balance sheet." The amount set up by the registrant as a liability in the balance sheet as "Payable to U. S. Government as a result of voluntary price reductions and of renegotiation," \$175,139,000.

13. Includes "amounts receivable under cost-plus-fixed-fee contracts, including pro rata portion of fee." After deduction of "Provision for cost items possibly not reimbursable," \$5,000,000. The company's contracts covering U. S. Government business are subject to renegotiation, however, no provision has been made.

14. Net sales after deduction of (a) "Voluntary contract price reduction," \$3,365,000 and (b) an additional "Provision for Estimated Profits Refundable to the U. S. Government through renegotiation," \$800,000. The registrant states, "It is impossible to determine at this time the eventual results of the renegotiation proceedings."

15. "Including proportionate fees and amounts equivalent to costs incurred on cost-plus-fixed-fee contracts." The company's contracts covering U. S. Government business are subject to renegotiation, however, no provision has been made.

16. After deduction of \$7,017,000 "Provision for Refund to U. S. Government under Renegotiation Agreement."

17. After deduction of \$1,025,000 "refund agreed upon in renegotiation proceedings"; the renegotiation agreement is subject to final approval by the U. S. War Department.

18. The company's contracts covering U. S. Government business are subject to renegotiation. A proposal by the Renegotiation Section of the Army Air Forces is being contested by the registrant. Should this proposal be upheld, "Net Sales", "Operating Profit", and "Net Profit Before Income Taxes" would be reduced by \$4,500,000, while "Net Profit After Income Taxes" would be decreased by \$1,236,000. In view of the company's disagreement with this finding, no provision has been made. Includes "Fixed Fee Income, Cost-Plus-Fixed-Fee Operations (Net of Applicable Expenses)."

19. The financial statements for 1942 give effect to the absorption by merger at Dec. 31, 1941 of Vega Aircraft Corp. Prior to that date, Vega Airplane Co. was an unconsolidated subsidiary. "Net Sales" were reported by the registrant after deduction of \$30,927,000—"Provision for reduction of prices under renegotiation of government contracts." Subsequently, as a result of the completion of renegotiation proceedings on June 4, 1943, the registrant has submitted additional data showing the effect upon the financial data previously submitted for 1942. Adjusted figures are presented for "Sales", "Net Profit Before Income Taxes", and "Net Profit After Income Taxes", previously reported as \$460,233,000, \$60,922,000, and \$8,164,000, respectively. Includes "expenditures for cost-plus-fixed-fee contracts and fee thereon."

20. Includes "costs and earned fees under cost-plus-fixed-fee contracts," \$93,735,000. The company's contracts covering U. S. Government business are subject to renegotiation, however, no provision has been made.

21. The company's contracts covering U. S. Government business are subject to renegotiation, however, no provision has been made.

22. (Same as 21.)

23. (Same as 21.) Includes "amounts receivable under cost-plus-fixed-fee contracts including pro rata portion of fee."

23a. Registrant reported as of July 31, 1941—Capital Stock \$357,000, Surplus Deficit \$201,000, and as of July 31, 1942—Capital Stock \$384,000, and Surplus \$2,518,000.

24. Registrant had not reported "Sales" for 1942 at the time of the compilation of this report. The company's contracts covering U. S. Government business are subject to renegotiation, however, no provision has been made.

25. Net sales after deduction of "Provision for Refund to the U. S. Government on Renegotiation of Contracts," \$1,700,000. The company has made this provision for reduction in price due to renegotiation, however, it is impossible to determine at this time the eventual results of the renegotiation proceeding.

26. After reduction by the registrant of \$33,037,000 due to price renegotiation. "The subsidiary companies have reached an agreement to pay to the Treasurer of the United States \$34,352,000—in complete settlement for the period to and including the year ended Dec. 31 1942." Of this amount \$33,037,000 is deemed applicable to the current year.

27. "The corporation's profits for the year have been adjusted in the amount of \$2,200,000 by renegotiation of war contracts, which adjustment . . . is reflected in the above statement."

28. "The corporation is subject to renegotiation . . . and negotiations for the years 1941 and 1942 have been concluded with the Price Adjustment Board of the Navy Department. In the closing agreement contract, the Government has accepted the renegotiation settlement arrived at in full satisfaction of the corporation's obligation under the said act for the period ended Jan. 1, 1943. Under this closing agreement the 'escalator' adjustment provisions covering possible increases or decreases in the labor and material costs of the corporation's principal contracts with the U. S. Government were waived to Jan. 1, 1943." Includes "Proceeds from the sale of design and manufacturing rights and licenses", and "Royalties and other income."

29. The company's contracts covering U. S. Government business are subject to renegotiation. The registrant states "the effect, if any, of such possible renegotiation upon the financial statements cannot be determined at this time."

30. Net sales after deduction by the registrant of "Provision for volunteer refunds to the Government," \$10,500,000. The company has made this provision for reduction in price due to renegotiation, however, in addition, the company is "subject to possible additional liability of approximately \$3,000,000 for renegotiation" for which no provision has been made.

31. Excludes "fixed fee-profit on U. S. Direct Contracts" treated by the registrant as "Other Income", \$41,000.

32. After deduction of "Royalties and licenses", \$26,000 in 1941 and \$36,000 in 1942. As a result of the completion of renegotiation proceedings, the registrant has submitted additional data showing the effect upon the financial data previously submitted. Adjusted figures are presented for "Sales", "Net Profit Before Income Taxes", and "Net Profit After Income Taxes", previously reported as \$3,073,000, \$452,000, and \$12,000, respectively.

33. "The effect of renegotiation for the year 1942 . . . which has been concluded, is reflected in these financial statements" (amount of reduction not stated).

Aviation Section of N. Y. Board of Trade Opposes State Aviation Division

The Aviation Section of the New York Board of Trade has registered its opposition to the creation of a State Division of Aviation and provision for a State Technical Institute of Aeronautics.

Commenting on the bill which would provide for a Commissioner at \$10,000 per year and appropriate \$50,000 for expenses, Matthew G. Ely, president of the Board of Trade said: "It is obvious that air transportation crosses many state lines, and that seldom, if ever, is air travel a matter of intra-state concern. Air Transportation and certain elements of the Civil Aeronautics Division of the United States Department of Commerce and the industry at large is closely supervised and regulated by the Federal government. It is entirely unnecessary for the several states to exercise additional jurisdiction over air transportation."

The Executive Committee also went on record in opposition to a bill designed to authorize and to provide for a State Technical Institute of Aeronautics, and to provide two million dollars of tax funds for that purpose.

Jesse Jones Urges Airport Survey to Lay Foundation For Postwar Developments

Secretary of Commerce Jones urged enactment of legislation providing for a national airport survey now to lay the foundation for postwar developments of civil and commercial aviation in a letter last fortnight to Chairman Clarence F. Lea (D., Calif.) of House Interstate and Foreign Commerce Committee.

The legislation was introduced by Rep. Jennings Randolph (D., W. Va.).

Partial text of Jones' statement was:

"There has been a very rapid development in aviation in the United States since the outbreak of the present war. The retention of the gains thus realized is of the utmost importance to the future encouragement and development of civil aeronautics and air commerce during the postwar period.

"In order that this development may be integrated and the gains preserved for postwar aviation, a survey of existing airports and navigation facilities, together with a consideration of future needs, is highly desirable at this time. Such a survey would enable Congress to establish through legislation a program for airport construction which would be suitable to postwar aviation needs."

Expect House Approval of Measure on Postwar Military Planning Soon

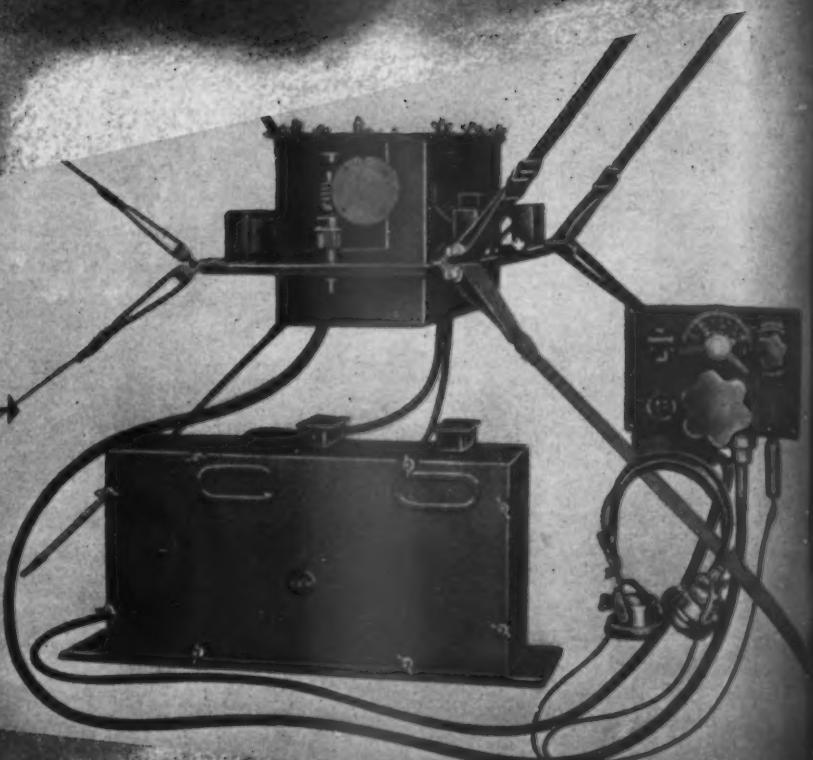
The stage was set for House approval of a resolution setting up a 21-man special committee on postwar military planning, as this issue went to press.

The resolution, introduced by Rep. James Wadsworth (R., N. Y.), had the support of Chairman Carl Vinson (D., Ga.) of House Naval Affairs Committee and Chairman Andrew J. May (D., Ky.) of House Military Affairs Committee. The House leadership had indicated its choice of Rep. Clifton A. Woodrum (D., Va.) for the chairmanship of the new group. Woodrum is the ranking Democrat on the House Appropriations Committee.

The new committee would be comprised of seven members from Military Affairs, seven from Naval Affairs, and seven from other committees whose work is related to military matters.

In its studies, the new committee will place emphasis on the question of merging the Army and Navy under one command. Testifying before Rules Committee, Wadsworth remarked that it would consider "to what extent a permanent unity of military and naval command should be established in the U. S."

1930



14 YEARS OF

IN 1930 airplanes were "crates." Wire, cloth, slats. Mostly biplane. Wonderful, but fearful. Compare these old machines with the streamlined, compact safety models of today.

Year by year aviation radio has kept pace. Matched progress. Produced RCA aircraft radio that is lighter, that does more, that is more dependable.

For example, shown at the upper left is an RCA aircraft receiver of 1930. The equivalent RCA 1944 equipment is less than one-eighth as bulky and one-fifth as heavy. Yet it does a far better job and provides two frequency ranges (550 to 1500 kc. and 195 to 450 kc.), instead of the one range available with the 1930 apparatus.

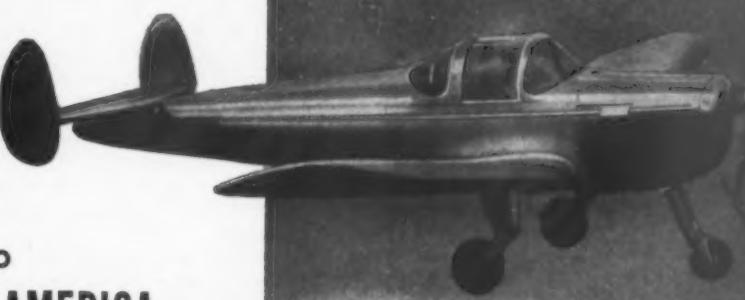
This is a typical example of RCA initiative and ability

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AVIATION RADIO

in developing improved radio equipment. In the years to come this progress will be maintained in further development of RCA aviation radio that meets the most exacting requirements of military, transport and light plane service.



RCA AVIATION RADIO

RADIO CORPORATION OF AMERICA

CAMDEN, N. J.

BUY WAR BONDS

Rickenbacker Opposes U. S. 'Chosen Instrument'

WE MUST DEFINITELY and unalterably oppose the single international aviation company, or the so-called chosen instrument, Capt. E. V. Rickenbacker asserted in an address given at the First Annual Dinner of the Wings Club held at the Waldorf-Astoria Hotel in New York March 22.

That would be the sure and direct route to the un-American evils of government ownership, or inner-sanctum cartels, he added. "The chosen instrument, or World Airways Trust, with its inherent inefficiency, would be the easiest and simplest type of competition our competitors could be called upon to face, as they have been internationally-minded for centuries, whereas we have a lot to learn in that kind of a game.

"On the other hand, foreign air monopolies truly fear the frank and free competition of American air transport companies with their 'know-how,' initiative, and energy to back it up. Even while we are discussing the relative merits between the chosen instrument and regulated open competition, the English and Canadians, who have been operating with the chosen instrument, are now discussing ways and means of eliminating it for the logical, stimulating regulated open competition for themselves."

Hits Surface Carriers

Another monopolistic danger to the industry lies in the efforts of the surface carriers to invade the air field, Capt. Rickenbacker charged. The surface interests, railroads and steamships, "had an opportunity for 15 years to develop air transportation but missed it," and now propose to move in under the guise of a need for "integrated transportation."

"I trust that a sixty-four dollar name like 'integrated transportation' bestowed upon the familiar old man 'monopoly' will not fool the American people. Nor will American farmers, merchants and manufacturers be sold any bill of goods to the effect that alleged over-expansion in transportation is to be remedied by curbing the development of aviation. For air transportation to come under the powerfully-financed surface carriers with their interlocking relationships and their vested loyalties to the railroads and steamships would doom free enterprise in air transportation."

Discussing the international situation, Capt. Rickenbacker pointed out that "even at this late date," American leaders, unable to agree among themselves on the question of our international aviation policy, are making no headway on the issue of monopoly versus open competition. Nevertheless, other countries are shaping up their programs for postwar international air transportation.

The stepping stones of the networks of global airways, the well-equipped airfields, built by American men with American money and material throughout the world, "seemed destined to be given away as Christmas gifts with Uncle Sam in the role of Santa Claus."

"This must not happen. Congress should establish without delay, a super board or council comprised of outstanding repre-

sentatives from our Army, Navy, Air Forces, Treasury Department, Post Office Department, Civil Aeronautics Board, Air Transport Industry, and last but not least, our State Department, with an elder statesman as chairman . . . Instead of having agreements which now permit use of these well-equipped air bases for only a period of six months after the war is over, we should have a five-point program in agreement with all other nations for the use of these facilities covering: (1) freedom from customs while in transit; (2) freedom of communications; (3) freedom of weather or meteorology; (4) freedom from higher tariffs or rentals than are being paid by the nationals of those countries for the use of their airports and facilities created and financed, directly or indirectly, by Americans and American money; (5) freedom from cut-throat subsidies."

Asks Unified ATC

Since it would be impossible to establish sound and workable international airways systems overnight, Rickenbacker proposed establishment of a unified Army and Navy Transport Command for the purpose of continuing our operations around the world.

This recommendation would keep America represented not only on the international airways but "also afford opportunity for the gradual taking over of these operations by the commercial airlines of the United States by those that are qualified . . . and there are many."

"Every industry, every business in the

Randolph Discusses Airships



Rep. Jennings Randolph (D., W. Va.) talks over the future commercial role of rigid airships with H. W. Crum, Goodyear Aircraft lighter-than-air expert, while examining a model of a proposed 10,000,000 cubic foot ship. Convinced that airships face a bright future in the heavy cargo field, Randolph pointed out that "they can carry 200,000 pounds of cargo from San Francisco to Honolulu in 35 hours and a half days to transport."

country has been torn out of its normal orbit in the interest of war production. But, looking the field over, I do not think that any industry has gone through a wider swing of the pendulum than the aircraft industry," he continued.

Stating that today aircraft manufacturers have twenty billion dollar enterprise, he contended that the spirit of leadership which has made the pace of production possible in the interest of victory, must not be lost in the interest of peace. It will be difficult to do this, he said, under existing conditions, if aircraft workers worry about how soon the floor will fall from under them and expose them to the torments of idleness.

Offers Recommendations

One of the main reasons for the costly turnover in the aviation industry, Rickenbacker indicated, is fear that the industry will collapse and jobs vanish when the war ends. To prevent this, he offered the following recommendations for Congressional action: (1) encourage expansion of domestic airlines, including pickup and local services; (2) maintain military overseas airlines until commercial companies can take over; (3) scrap all obsolete combat and transport planes and plane equipment used by our military services over six months old; (4) lease only those transport planes used during the war that are in good condition and of the latest production series to air transport companies; (5) limit use of these transports to commercial companies to not less than one year and not more than two years; (6) advocate that all air transport companies to whom the Government has leased these models, place orders with the manufacturing industry for an equal number of new and more efficient types, then scrap the leased ones as new ones are delivered; (7) develop new and more efficient types of cargo planes; (8) keep the training program of approximately 600 schools and colleges active by leasing to them surplus training planes; (9) enact legislation that will make all first class mail that travels beyond 150 miles, air mail.

His recommendation for the scrapping program was based, he said, on the fact that 75% of the estimated 15,000 to 20,000 transport planes, as well as the combat planes now being used by the military services will be obsolete, and should find their way back to the empty material bins. "These planes have already been paid for and the loss would be insignificant compared with the loss through the collapse of our aviation industry—to say nothing of the vast unemployment that would accompany such a disaster.

"Further, our research laboratories, engineering geniuses and the aviation industry would be given the opportunity of designing and building new planes for replacement in our military and air transport services, as well as the training schools and private owners, thereby keeping our technical units up-to-date and abreast of the times, need and demand.

"We must not make the fatal error we made after World War I when all surplus military aircraft was thrown on the open market thereby flooding it, and practically destroying the manufacturing industry for many years after."

Casey Jones was toastmaster for the dinner program, and J. Carroll Cone, assistant vice president of PAA, was chairman.

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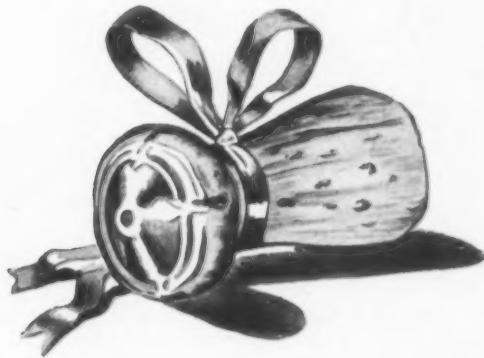
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They wouldn't fly without them...



A battered toy monkey goes along on every flight of one aerial gunner who, when we last heard from him, had personally cancelled five Zeros.



A champagne cork—memento of some very special evening—always hangs on the instrument panel of a sentimental co-pilot. It's helped to "pop" several Jerrys.



A black Homburg hat, instead of a regulation helmet, always adorns the head of one of the hottest RAF fighter pilots in the business.



ETHYL is a
trade mark name

Ethyl antiknock fluid goes along with every fighting plane powered by U. S. made gasoline. *It goes into every gallon of fighting grade aviation fuel*—and today more Ethyl is being used in each gallon than ever before.

ETHYL CORPORATION

Chrysler Building, New York City

DC-7 Specifications Revealed; Designed for Over-ocean Lines

THE DOUGLAS DC-7 postwar plane, which the Douglas Aircraft Company has designed as a "true over-ocean transport designed for the ranges encountered, and incorporating the necessary refinements that lead to economical and comfortable transoceanic travel" is planned for early production after the war, the company announces. Censorship has now permitted publication of DC-7 data for the first time.

Airline executives previously have seen the large wooden mock-up of the DC-7 at the Douglas Santa Monica plant, and its specifications were published in a restricted booklet put out by the company nearly three months ago, but censorship had not previously permitted publication.

Specially designed for transoceanic service, the DC-7 will carry 86 passengers as a dayplane and 76 as sleeper. Designed for four 3,000 horsepower engines, it has a wing span of 173 feet, three inches; fuselage 123 feet, four inches long and overall height 43 feet, eight inches. Loaded weight is 145,000 pounds, empty weight 85,890 pounds. Useful load is 59,100 pounds. Speed is estimated upward to 400 mph and cruising range more than 4,000 miles.

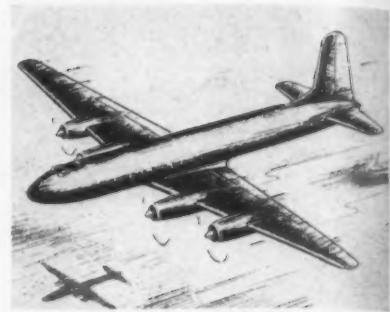
It has a supercharged cabin and ceiling is estimated at 40,000 feet. Estimated cost is \$1,250,000 based on reasonable production quantity. Streamlined with the familiar Douglas single tail, DC-7 has tricycle gear, double wheeled each leg. Instead of the usual pilot enclosure, the plane has "bugeyes," two streamlined orbs set in curved nose section, one each for pilot and co-pilot. The wing is set back, almost at fuselage center.

Accommodations include chair and compartment sections, lounge bar and dining areas, buffet, upper, middle and lower berths, coatroom, four lavatories, stewardess and crew quarters.

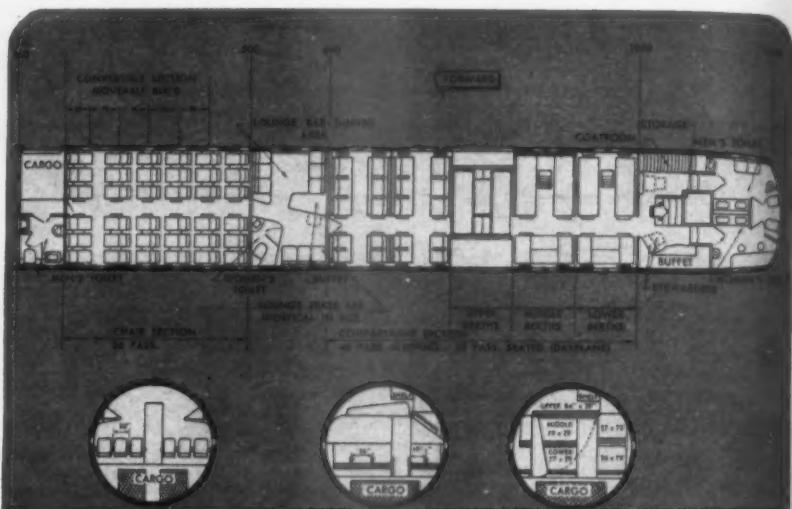
Airline cargo experts are reported to especially like placement of large cargo holds below flooring of the fuselage mak-

ing possible use of elevators and latest cargo handling techniques and doing away with nose and rear cargo compartments.

The DC-7 will be designed to meet all CAA requirements, both structural and aerodynamic at a take-off weight of 145,000 pounds. Should a stalling speed of 85 mph be approved by the CAA for this model, a landing weight of 126,000 lbs. will be permissible, it is reported.



Drawing of DC-7 in flight.

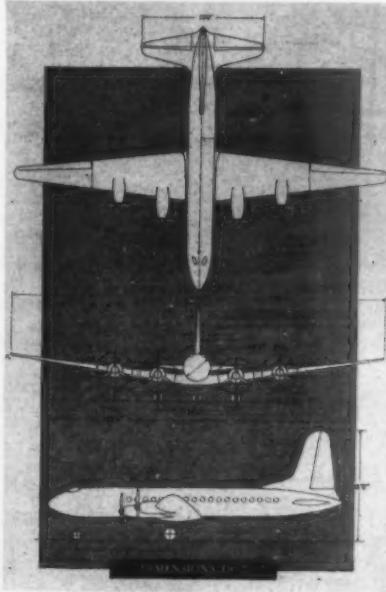


The above drawing shows details of each section of the DC-7. As a "Sleeper," it will accommodate 40 passengers in berths and 36 passengers seated. As a "Dayplane," it will accommodate 86 passengers. Drawing below gives detailed dimensions of the plane.

Invention by Scottish Flying Instructor May Reduce Cost of Airports

A young Scottish flying instructor, Owen MacLaren, has invented a device which, by permitting an airplane to move crabwise with a sidelong motion, is expected to simplify take-offs and landings and to save large sums in the construction of runways directed to all points of the compass, British Information Service reveals. Tests began six years ago.

In the new device, the aircraft's wheels are set at an appropriate angle of the wind in relation to the runway on which it is to land or from which it is to take off. This enables the crabwise movement to be prolonged. It is thus unnecessary to turn the aircraft into the wind before taking off or landing, but simply to set the wheels at a requisite angle of the drift. The pilot puts the nose of the plane into the wind, and then swivels the wheels so he can land at an angle to the direction in which the nose is pointing.

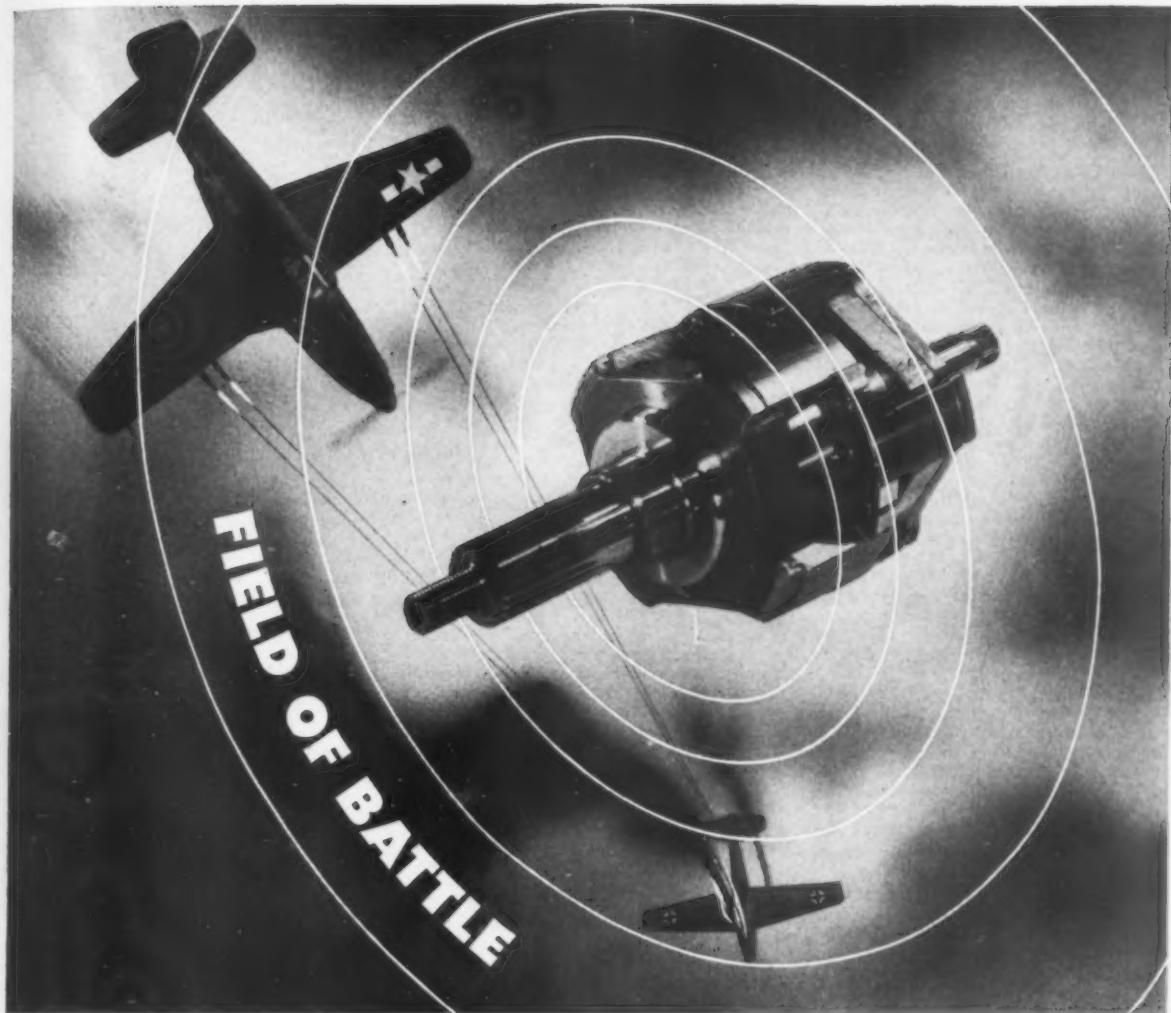


Light Aircraft Meeting Sponsored by Institute in Detroit April 27-28

The National Light Aircraft Meeting of the Institute of the Aeronautical Sciences, to be held in Detroit April 27 and 28, will feature 21 papers concerning the progress and development of light aircraft, the institute announces.

The program will be divided into four technical sessions, namely, Structures and Design, Power-Plant and Propeller Problems, Instruments and Accessories, and General Engineering. Discussion leaders will be Peter Altman, consulting engineer; James W. Kinnucan, of Continental Aviation Engineering Corp.; William B. Stout, of Stout Research Division, Consolidated Vultee Aircraft Corp.; and Arnold N. Kuethe, of the University of Michigan, respectively.

The meeting will be held at the Horace H. Rackham Educational Memorial, with both afternoon and evening sessions having been planned.



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THIS is the field of battle in the sky...the stable field of a rotating magnet...heart of a Bendix-Scintilla* Aircraft Magneto. Into the making of this vital part go superlative steel and precise engineering...for on the strength and stability of its magnetic force depends the generation of sparks to fire the engines of our fighting aircraft.

Bendix-Scintilla engineers have contributed notably to the advancement of Aircraft Ignition. Their inventiveness and practical experience, now wholly devoted

to the prosecution of the war, will one day again be applied to the pursuits of peace.



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Bendix-Scintilla Aircraft Magneto,
Harnesses and Switches, vital members of
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THE INVISIBLE CREW
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Program for Flying Farm Products Near—Wickard

AN ALMOST immediate possibility of inaugurating a program for air shipment of perishable farm products, subject only to the availability of cargo transport planes, has been forecast by Claude Wickard, Secretary of Agriculture.

In substantiation of his statement, an analysis just prepared by the Bureau of Agricultural Economics, working in conjunction with Wayne University, tends to prove that certain perishables can be transported by air, more conveniently and at little or no more cost, when various savings are taken into consideration, than by other surface means.

Commodities that are the most adaptable to air transport are those that demand high speed transportation or special care in handling, the report states, adding that certain fruits and vegetables are of this type. If the airplane can get the produce to the consumer in a more palatable and nutritious form, the consumer will gain by getting a better product. Also, the producer may gain by obtaining a larger income because of the greater demand for his product.

To illustrate how air freight of perishable foods might work out, a fictitious operation was assumed by the research officials, predicated it on the employment of present equipment as soon as it becomes available for commercial use. The problem was centered about hypothetical shipments by air of strawberries and tomatoes from typical winter producing centers to Detroit, Michigan.

Transportation costs were established on these premises: (1) That the air carrier is a private company with eight C-47 airplanes in continuous operations; (2) That availability of the specified produce at the growing centers will allow 100% load factor to Detroit, with an average 75% load factor on return trips. Return cargoes would consist of mixed com-

modities from Detroit to Atlanta, Birmingham, and other Southern cities; (3) that completion of trips is 95%; (4) That enough business other than transporting strawberries and tomatoes exists throughout the year to justify continuous operations.

Based upon these premises, the analysis indicates an air transportation charge of 11.3c per quart of strawberries from the Lakeland, Fla., producing area to Detroit, and 8c per pound of tomatoes from the Miami producing area to Detroit.

Comparison with charges by competing transportation methods shows that air transportation charges are about 6 1/2c higher than rail or truck shipments and 6c higher than rail express per quart of strawberries and approximately 6c higher per pound of tomatoes.

However, savings in containers and ripening costs gained by air transportation of tomatoes are about equal to the additional cost of this method of transportation. For strawberries, the savings in container costs would reduce the additional cost per quart to 5c. This would represent a premium paid for what is expected to be a superior quality product. When the net difference between air-transported and surface-transported costs is added to the retail price of strawberries the additional cost does not represent a substantially higher price to the housewife, quality considered.

The Wayne University section of the report shows that when peace returns, fresh produce alone would furnish enough air cargo to total over 233 times the combined weights of all commodities carried by air in 1941, provided air-freight rates can be reduced to 5c per ton mile—a figure which many authorities see as possible in the near future. Even at 7c a mile, fruit and vegetable traffic equal to 80 times the 1941 figure for all air express is expected to develop.



U. S. DEPARTMENT OF AGRICULTURE

NEG. 42519

BUREAU OF AGRICULTURAL ECONOMICS



Isabelle Stevens, TWA cargo girl, is shown in Los Angeles loading asparagus aboard a Detroit plane, First Officer George Maguire assisting. The produce was picked on Monday and arrived in Detroit in time for a Thursday luncheon.

Pogue Sees Opening of New Air Cargo Markets 'Aiding All'

Development of new markets in air cargo transportation will have a tendency to help rather than hurt the older forms of transportation in the opinion of L. Welch Pogue, chairman of the Civil Aeronautics Administration. Pogue expressed this opinion before an air cargo meeting in Detroit, March 23.

He said he did not feel that the airplane is going to eliminate the railroad and the steamship in the cargo field. However he said it would not be hard to persuade him that the principal impetus of air cargo will be the development of new markets and that the shrinking of the world by air transportation might result in such an acceleration of new market activity as actually to increase the cargo business of the steamship lines and the railroads.

Pogue does not believe that rates charged for the actual transportation of cargo are the only factors that a shipper must appraise in determining whether to ship by air.

"Incidentally those rates are coming down very drastically and as they fall the volume of flying cargo will rise," Pogue said.

New markets will be available to perishables and new opportunities will be created for the marketing of goods whose sales ability depends upon timeliness, he said, in leading up to the types of savings which might be expected from shipments by air.

"Packing can be less expensive because it need not be so heavy as when shipping by rail or truck," he stated. "If the package is not so heavy, the transportation rates apply to a smaller weight base. Much handling can be eliminated in many cases because an airplane can go directly from anywhere to anywhere. Breakage and spoilage will be reduced and, in many cases, eliminated."

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Air Transport Command,
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These make up the unbeatable quartet
which, under the urgencies of global war,
has advanced the facilities for air travel
25 years since Pearl Harbor.

Operating on a scale so vast
as to stagger the imagination,
ATC, TCC, NATS and the Airlines are
flying *everything* that can be flown
everywhere throughout the world.

Thus with unlimited resources,
the mailed fist of war holds a test tube
which is so perfecting air travel
that come postwar you can wing your way
to the far corners of the earth
with no greater concern than
you now board a streetcar.

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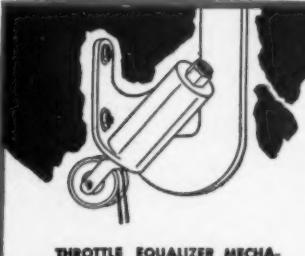
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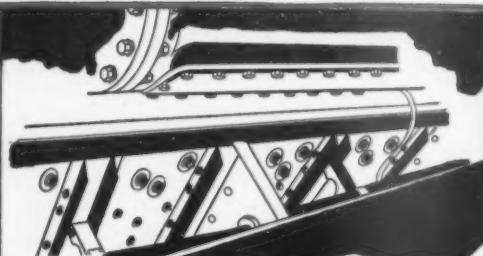
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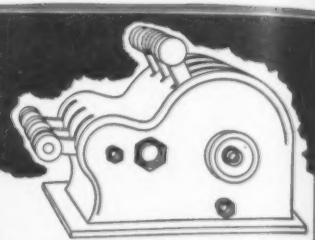
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THROTTLE EQUALIZER MECHANISM fastened with Elastic Stop Nuts keeps throttle settings the same, even when the hull is distorted by heavy seas.



ENGINE BEDS. PT boats are a blasting mass of power. Besides, stresses and strains make the hulls weave. So, to hold the engines tight and secure against vibration and other forces, they are fastened down with Elastic Stop Nuts.



ENGINE ROOM SIGNALS and engine controls center in this unit held firm and secure with Elastic Stop Nuts.



GRIPPING TIGHT ON THE BATTLING COCKLESHHELLS

They're swift. They're light. They're crammed with 4,000 throbbing horsepower that drives them, fighting like demons, through giant seas at breakneck pace.

Naturally they take an awful beating.

Under such shock and vibration only the surest fastenings will hold. That's why throughout Higgins Boats you'll see the famous red collar that marks Elastic Stop Nuts.

These nuts hold fast in the face of the worst vibration. This is accomplished by the elastic collar built in the head of the nut. This collar

grips the bolt — presses itself between the bolt threads and holds tight. The nut can't wiggle. It can't turn. It can't shake loose.

These nuts will work wonders in peacetime uses. They'll make products safer, stronger and longer-lasting. They'll keep production equipment working with fewer inspections, take-ups and replacements.

Get the facts from our engineers. They'll gladly tell you about Elastic Stop Nuts and sit down with you to help work out any fastening problem you have.

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Gentlemen:

Torpedo boats must be built to stand terrific punishment — not only from heavy seas, but from vibration of engines, machine guns and depth charges. Precious time in maintenance and a greater sense of security are gained by the use of Elastic Stop Nuts at all vital points. Weight is also at a premium in PT's as in aircraft and prohibits the use of more cumbersome and less positive locking methods.

Yours very truly,

Project Engineer, HIGGINS INDUSTRIES, INC.

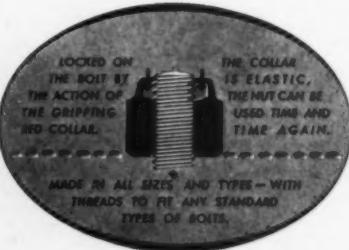
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ELASTIC STOP NUTS

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UNION, NEW JERSEY AND LINCOLN, NEBRASKA



Another 'Morrow Board' Needed, Says E. E. Wilson

APPOINTMENT of an American Air Power Policy Commission, composed of "men with individual reputations for integrity and sound judgment, who can recommend to Congress a policy which will reflect the point of view of all responsible authorities," was advocated by Eugene E. Wilson, vice chairman of United Aircraft Corp., in a recent New York ad-



E. E. Wilson

dress.

"We find ourselves in a situation similar to that which caused President Coolidge to appoint his Morrow Board," he told members of the Economic Club of New York. "This group" emerged with a simple statement of sound principles. They became the Magna Carta of American Aviation."

Wilson emphasized, however, that since the date of the Morrow report "great changes have occurred, with the airplane having proven itself a vital instrument in Air Force and Air Transport."

He warned that other nations are "shaping policy," and that the United States should do so "while we still hold the superior air power."

Wants New Policy

"The British Commonwealth, to which seapower as been the lifeblood, sees airpower in a similar role," he said. "Already, steps are being taken to shape policy. The Union of Soviet Socialist Republics, functioning under state capitalism with national economic planning, will have clear ideas as to the employment of airpower. Thus it is clear that our present need is for a new policy providing the optimum conditions under which American airpower could develop naturally. After we have crystallized such a policy, then we will be ready to sit down in an international meeting and with full regard for our national interests try to evolve a world policy designed to preserve peace and promote prosperity. And this should be done while we still hold the superior airpower."

Wilson suggested that "perhaps we need variations of, or even combinations of, the 'chosen instrument' and 'unlimited competition' proposals regarding international air transport.

"There are many persuasive arguments for the 'chosen instrument' method, because international air transport touches the delicate nerve of national sovereignty. But we Americans instinctively dislike monopoly, first, because we distrust its power, and, second, because experience has shown it to be inimical to technical progress," he said. "Hence, we have on the other side the proposal for 'unlimited

* Dwight W. Morrow, chairman: Arthur C. Denison, Dr. William F. Durand, Hiram Bingham, James S. Parker, Carl Vinson, Gen. James G. Harbord, Adm. Frank Fletcher, and Howard E. Coffin.

competition.' This also has persuasive aspects, and, yet, we realize that, as in domestic air transport, cutthroat-rate competition would, in the long run, be destructive to sound development of a public service."

Wilson asserted that the very magnitude of aircraft manufacturing's expansion complicates its future. He listed "three great hurdles which lie ahead":

- "If war contracts are terminated in the ruthless manner of World War I, the industry can hardly survive. This is especially true in this war, since profit limitation has precluded accumulation of reserves adequate to carry through termination under any other than orderly processes.

- "If surplus war stocks are dumped, as in World War I, its market will be impaired.

- "If surplus war plants are Government-operated in competition with private industry, the results would be fatal, for no seller can compete successfully with his customer."

Processes Must Be Swift

"Since the backbone of airpower is a strong private aircraft industry, the public interest demands orderly termination, orderly disposal of surplus goods, and courageous handling of surplus plants," he added. "The processes, while orderly, must be swift, lest the whole domestic economy be impaired. And the underlying principle here seems clear. Surplus plants and surplus war goods may even be considered in the nature of similar goods already expended in war. They are public property, and should be administered in the public interest."

Wilson observed that the isolation the United States once enjoyed behind the combined American and British seapower "is no more."

"We ourselves have built great airways around and across the seas, and have provided land bases for them," he pointed out. "Newfoundland, Labrador, Greenland, Iceland, to Europe; Whitehorse, Fairbanks, the Aleutians, to Asia; Trinidad, Natal, Ascension, to Africa; Hawaii, Samoa, Fiji, to Australia. These, and many others, have linked North and South America to the other continents."

"We have been viewing these as outward flowing streams. We must see them, too, as channels leading to the heart of America."

Starting With a Bang!

Shotgun shells are being substituted for storage batteries to start airplane motors during testing, Winchester Repeating Arms Co. reports. Placed in the starter mechanism, the cartridge is fired electrically by a fuse assembly located in the head of the shell. The electrical current ignites the charge of black powder in the shell and releases powerful gases which set the starting mechanism into operation. The airplane starter cartridge is longer, but similar in appearance to a standard shotshell, the company reveals.

'P.O. of Future To Have Landing Accommodations'

Future post office design in the United States will follow a pattern "accommodating airplanes which operate vertically," W. E. Reynolds, Commissioner of Public Buildings, has revealed to *American Aviation*.

The Commissioner disclosed that part of a \$500,000 fund allotted by Congress to the Public Buildings Administration for postwar planning has been allocated for the design of post office rooftops as airplane landing areas. PBA also is drafting a recommendation that land purchased by the government for future post offices be of sufficient area to permit "horizontal as well as vertical expansion," he said.

"We have examined the history of public buildings over a period of 20 years and find there has been a lack of foresight in the purchase of property," he explained. "Too often, expansion of a building has been cut off horizontally by the erection of adjacent structures, and vertically by zoning laws. There has been no alternative but to move out and purchase larger quarters—at considerable expense."

'Horizontal' Expansion

"We are recommending that in the future, property be purchased with a view toward broad horizontal expansion. In the case of post offices, vacant land may be utilized for airplane landing areas. I should think that ground-level unloading of air mail would be preferable to rooftop operations, if the land were available."

Reynolds emphasized, however, that PBA will soon have completed specifications for post office rooftop landing areas of all sizes. He pointed out that such areas are much in demand in cities of more than 25,000 population, because post offices there "are usually a long distance from airports, whereas smaller cities and towns are not faced with this problem."

"It will cost no more to build a roof for landing purposes than to build it along conventional lines," he said. "Our only real problem is in the rearrangement of drainage facilities. Instead of parapets around the edges of a roof—walls made of brick or stone—we will have railings or open grillwork of a decorative type, thus permitting rain to run off the edges into downspouts. Roof surfaces would be of non-abrasive materials, probably asphalt tiles or blocks."

Reynolds revealed that all future post office designs call for roofs structurally strong enough to support planes and their cargoes. He believes the vertical-lift plane is here to stay, but hazards no guess as to how soon it will be placed into practical use as a carrier of mail and cargo. However, he favors preparing now for any eventuality. His philosophy, as enunciated before the House Public Buildings and Grounds Committee March 2, when he made a comprehensive report on postwar planning in relation to urban redevelopment, is to "base your plans on long range objectives and keep them sufficiently flexible to admit of adjustment in accordance with new and changing conditions."

WTS Instructors, Trainees Assigned To Air Force Duty

Almost all trainees and instructors in CAA-War Training Service's instructor program have been assigned to duty in the Army Air Forces, the War Department announced last week. The report indicates that less than half of the men will have actual flying jobs, although most will be utilized in the Air Forces.

Of the 4,687 trainees, all of whom are enlisted personnel in the Army, the AAF reported 974 qualified for Aviation Cadet training; 651 for glider training; 2,618 for technical training; 310 for specialist duties; and 134 were hospitalized, given furloughs "and otherwise accounted for."

Among the 615 Enlisted Reservist instructors in the program, 94 have been reemployed by CAA-WTS in other activities, 229 have applied for assignment to the Air Transport Command, 47 have been reported by the CAA to the AAF for activation or discharge, and the final 245 are in process of being reported by the CAA to the AAF for activation or discharge.

The men released by the abandonment of the instructor program were offered the choice of: (1) Aviation Cadet, if qualified; (2) volunteering for glider training, if qualified; and (3) volunteering for technical training. In addition, instructors have been given the opportunity of competing for pilot assignments. The AAF states that it will give special flying tests and physical examinations

to such applicants, and all instructors who meet the qualifications will be employed as commissioned officers.

The Army announcement stated: "The Air Transport Command is accepting CAA-WTS pilots who have 1,000 flying hours, 200 of which are in aircraft of 200 hp or more; six months' time in the Enlisted Reserve; can pass the Army Class 2 physical examination; can pass comprehensive flight tests in basic type Army trainers; and successfully complete both the course in instrument flying and the twin-engine transition course now being conducted at various AAF training establishments. Because the CAA men generally are qualified to fly only light airplanes, it will be necessary for the AAF to give those who meet AAF requirements further instruction at Army schools to qualify them for their duty with ATC, which will consist primarily of ferrying combat type aircraft. Candidates meeting all the requirements will be eligible for service pilot ratings, commissions as second lieutenants and assignments to ferrying activities.

Included in the War Department announcement was a defense of the Women's Air Force Service Pilots which the Army has "found to be militarily sound and necessary." Men released by CAA-WTS can be used for services for which women are not suited, they explain, whereas women are qualified for certain flying duties which they can discharge as competently as men.

Ferrying Record

A record number of four-engined American bombers are arriving in Britain "10 days after leaving assembly lines in the United States," British newspapers report.

New-Type P-38 Sharpens AAF's 'Eyes'



The spearhead for the AAF's experiments in high-speed reconnaissance is this new Lockheed Lightning F-5 (upper photo). It differs from the P-38 only in that it carries cameras instead of guns. It is proving successful at carrying the Focus Cat, as the recce pilot is known, through all kinds of flying, and speeding home with the film. It carries from three to five cameras, which are controlled by an electrical impulse unit and may be operated singly or collectively. A shutterless, continuous strip camera is used on low level flights. This camera takes one, long uninterrupted flow of pictures instead of a series of snaps. The film winds past a narrow slit in the "box," its speed synchronized to the speed and altitude of the plane. Flying at less than 200 feet, below anti-aircraft range, the F-5 can photograph large areas and get away before enemy gunners can adjust their aim.

Executive Agencies Reach Agreement On Contract Termination

The executive agencies apparently have reached agreement on the principles of contract termination and are attempting to push through legislation early in April. In testimony before the House Postwar Economic Policy Committee, John M. Hancock indicated that in addition, the principles endorsed by the executive agencies were in agreement 95% with those proposed by the George-Murray bill (S.1718).

Hancock, co-author of the Baruch-Hancock report on "War and Postwar Adjustment" and chairman of the Joint Contract Termination Board, urged Congress to pass legislation now on all concurring points leaving controversial issues to be decided at a later date. Two reasons were given which make immediate enactment of contract termination legislation imperative. The first is the growing number of contracts which must be terminated by the procurement agencies now due to changing requirements of the war effort. The second, and less well known pressure, is created by the need to train about 4,000 government officials and an equal number from industry in the methods by which contracts will be terminated.

Although preliminary instruction has been given about 400 men by the Army Industrial College and the Harvard School of Business, actual nation-wide classes must be conducted, based on the exact legislation which is passed. Hancock stated that it would require four months "to do a good instruction job." He explained that faculty would be trained in Washington and sent to 30 or 40 centers around the country to train the government and industry officials who will handle actual termination.

Hancock also recommended the continuation of government contracts for development and research on new types of aircraft and aircraft parts after the war. "If we terminated all aircraft contracts after the war, aviation would be stymied just as it was after the last war," he said. He urged the government men in each plant to tell the contractors exactly how much of his government work will be continued and how much terminated "when X day comes."



Interior of F-5 nose, fully equipped.



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No time in the flight of a huge transport plane is more important than the seconds-short landing period.

America's biggest planes are equipped with Aerols* to cushion landing shock and provide protection to plane, crew and cargo. Introduced when aviation was still in its infancy, Aerols are contributing substantially to aviation's progress—as planes grow in size, weight and speed, Aerols solve the landing problem for these aerial leviathans.

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CREASIDE



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★ Landing parties must depend on supporting fire from ships off shore until their own artillery can get into action. By radio communication the Navy's fire is brought instantly to bear on enemy strong points holding up the advance.

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INDIANAPOLIS

Power Supply using rechargeable, non-spill storage battery for operation of Walkie-Talkie radio equipment. Input Voltage: 4 Volts D.C.; Output: Numerous Voltages, supplying plate and filament requirements of the equipment. Width, 3½"; Length, 6½"; Height, 4½".



No Helicopter?

The following item is reprinted from the current issue of *The Log*, official journal of the British Air Line Pilots Association:

"One of our Boeing captains reports that whilst making an approach to land in a neutral country he received a message by radio instructing him to stay where he was and then follow the launch to the moorings. The aircraft was still 30 feet from the water, and although attempts were made to comply with the instruction, no cooperation was received from gravity. The control officer's ears were reported to be smouldering a little later."

Long-Range Pilot Training Program Supported by Coombs

"Aircraft production in West Coast plants inevitably is linked in the post-war era with the nation's pilot training program and support of long range adequate training programs must be insured if plane plants are to escape the debacle of nearly complete shutdowns," J. Wendell Coombs, president of Aeronautical Training Society, told 16 Western flying schools at a recent conference in Los Angeles.

Coombs warned that the outstanding record of the 63 ATS schools in giving more than 100,000 young Americans primary flight training since the war in Europe started should not lull anyone into false belief that more planes and more pilots won't be needed when peace comes. For war security there must be a new crop of pilots every year, because "military pilots become obsolete at about the same rate as military aircraft."

Airport Survey Concern Organized in New York

Lincoln Epworth, New York attorney, announces formation of the General Airport Co., with executive offices at 101 Park Ave., New York City. Branch offices will be opened shortly in Chicago and San Francisco.

The company will conduct detailed surveys to determine airport needs, with the cooperation of municipalities and private interests. This division of the company will be under the direct supervision of Robert C. Read, industrial engineer.

General Airport has retained the York Research Corp., New York, to handle all architectural engineering work in connection with its airport projects.

Doolittle a Lieutenant General

Maj. Gen. James H. Doolittle, commanding the United States Eighth Air Force in Great Britain, has been nominated by President Roosevelt to be a lieutenant general and the Senate has confirmed the recommendation. Gen. Doolittle, who is 47 years old, held the temporary rank of lieutenant colonel when he led the raid on Tokyo on April 18, 1942. After this attack he was promoted to brigadier general and received the Congressional Medal of Honor.

Committee Favors Taking WASPs Into Regular Army

RESPONDING to the request of Gen. H. H. Arnold, commanding general of the Army Air Forces, House Military Affairs Committee last fortnight reported out legislation which would make the Women's Airforce Service Pilots program a part of the regular Army.

The Committee favorably recommended the legislation to the House within 30 minutes after Arnold testified, pointing to a manpower shortage of 200,000 in the Army and declaring it imperative that women be used to replace men wherever possible "whether that be in the factories, ferrying aircraft across the country, or towing targets for ground troops to shoot at."

The legislation was introduced by Rep. John M. Costello (D., Cal.), who told reporters that if it is enacted, Jacqueline Cochran, head of the WASPS, would become a colonel.

Arnold reported that the legislation was necessary so that the Army could increase its control over the women ferry pilots and give them accident and hospitalization benefits. WASPS are now civil service employees and number 534.

Arnold disclosed Army plans for a measurable step-up in the WASP program. "We will have to enlarge schools and will also have to acquire new schools," he said.

He told the Committee that it was not feasible to bring the women pilots into the Air Forces as WACs. "There are certain basic provisions in the WAC legislation which prevents our taking over the WASPS, for example, a lot of the WASPS are under 20—the best age for pilots, whether men or women, and also, a lot of the WASPS have children under 14."

Emphasizing the need for men on the fighting fronts, Arnold predicted that "it is not unreasonable to expect that all of transport flying in the U. S. will be done by women." The Army will not use women pilots outside the continental U. S., he reported.

On account of the Army's manpower shortage, Arnold said that the Air Forces recently turned 36,000 selected men over to other branches of the service. These men had qualified physically and mentally for air operations, "but the shortage is so severe that we thought it best to return them to the ground forces rather than to keep them in a pool to be called to our

ground schools next year."

Answering charges that the Army is using women pilots while qualified men pilots are without jobs, Arnold declared that every man meeting AAF requirements would be "given a chance to fly." However, he added, "if they cannot qualify according to our standards then we release them. We cannot lower our standards because a man has had a few hours in the air."

In this connection, the action by the House Military Affairs Committee to bring the WASPS into the Army, it was believed on Capitol Hill, would stave off a possible investigation by the House Civil Service Investigating Committee. The WASP program faced such an investigation earlier in the fortnight when the staff of the Civil Service Committee opened questioning to determine the advisability of continuing the program while reports were that thousands of experienced men pilots were looking for jobs. The Committee only advanced to the stage, however, of "considering" whether or not an investigation was warranted and advisable.

Arnold highly commended the performance of the WASPS, stating that many of the women are now able to ferry all plane types and that the others "are working up to that category." He said that the AAF has already started replacing men in the Training Command with women.

Responding to Congressional questioning, Arnold admitted that "the air program is about reaching its peak" and that, inevitably, civilian pilot training schools are being taken out of the Army's program and that some of the men released are being turned over to other branches of the service to do jobs for which women are not suited.

The Air Forces will take care of all the enlisted reserves released by this action, he said, and will give those who qualify the chance to serve as pilots. The Army does not consider it its obligation, however, to take care of some 280 men released who are not enlisted reservists, but are solely under the Civil Aeronautics Administration, however, Arnold added. "They were given chance to come into the enlisted reserve and refused to do so. They refused and so we feel we owe them no obligation."

Aero Chamber Election Set for April 11

James P. Murray, president of the Aeronautical Chamber of Commerce, has issued a call for a special meeting of the Chamber membership to be held April 11 for the election of the board of governors. The meeting will be at 11 a. m. in the Chamber offices, 610 Shoreham Bldg., Washington.

The election is seen as a prelude to final action on pending reorganization plans.

Nominated for governors from Division A are presidents of 12 major aircraft manufacturing firms, and one vice chairman. They are: Donald W. Douglas, Douglas Aircraft Co.; J. H. Kindelberger, North American Aviation, Inc.; Robert E. Gross, Lockheed Aircraft Corp.; Harry

Woodhead, Consolidated Vultee Aircraft Corp.; P. G. Johnson, Boeing Aircraft Co.; T. Claude Ryan, Ryan Aeronautical Co.; Guy W. Vaughan, Curtiss-Wright Corp.; Eugene E. Wilson (vice chairman) United Aircraft Corp.; Glenn L. Martin, The Glenn L. Martin Co.; J. Carlton Ward, Jr., Fairchild Engine & Airplane Corp.; Victor Emanuel, The Aviation Corp.; Alfred Marchev, Republic Aviation Corp.

Nominees of Division B are E. R. Breech, president of Bendix Aviation Corp., and Thomas A. Morgan, president of Sperry Corp. The Division C nominee is Clayton J. Brukner, president of Waco Aircraft Co.

British Air Transport Auxiliary Has Excellent Wartime Record

(The following story was written by Wayne W. Parrish, editor and publisher of American Aviation, who has just returned from England.)

ONE OF THE smoothest-functioning units of Britain's war machine is the Air Transport Auxiliary, the plane ferrying service operated by civilians and attached to the Ministry of Aircraft Production. Its record is excellent. And for man hours per measure of achievement, it is probably tops in the British Isles.

A few Americans—including women—are still part of ATA, while American planes are in wide use as trainers and as aerial taxis for transporting ATA pilots.

Air Transport Auxiliary was created in 1939 as a communications network to replace railroads in the event the Germans were able to knock out the rail system. The knock-out blow never came, but ATA soon found a job for itself in ferrying of RAF aircraft from factories to bases or maintenance units, and even from one base to another if RAF requested.

ATA does not operate a transport system as such, although it does have a fleet of Ansons and Fairchilds for its own use. It doesn't operate outside the British Isles. It is strictly a civilian ferrying organization. But it is tightly organized, self-contained, and operates with a minimum of overhead.

70,000 in 1943

As an example of its activities, it performed 70,000 airplane movements in 1943 and this total represented no less than 90 different types of aircraft. Total flying hours were about 200,000, a figure which in the United States may not seem too impressive but which is actually an impressively high record when one considers the small size of the British Isles and the number of movements. Since its creation ATA has ferried 158 different types of aircraft and its chief test pilot has flown 98 types.

Head of ATA is Commodore Gerard d' Erlanger, a stock broker before the war and member of a well known banking family. d' Erlanger has proved himself an able administrator and organizer.

Within the ranks of ATA are pilots and personnel from all walks of life—fruit growers, doctors, barristers and the like. In this regard ATA is similar to Civil Air Patrol. A minor part of the flying is done by women. There are three pilots with such physical handicaps as a missing arm. One of them, Flight Captain S. Keith Jopp, ferries such fast planes as the Typhoon.

The average age of ATA pilots is in the upper thirties. Several are over fifty. When ATA was first organized, it endeavored to get pilots from Canada and the U. S., and a considerable number came over. By and large the early pilots from North America did not make the grade—they were not first class, or were has-beens, and were out more for adventure than the serious day-in-and-day-out job of ferrying. Later pilots from North America have turned in a good job.

There are no RAF pilots in ATA, although today ATA is getting some ex-

perienced RAF pilots who have been released from active duty for one reason or another. There are almost no so-called professional pilots in the entire organization. ATA is composed almost entirely of amateurs—and they have proved to be more keen about performing their jobs than the professionals.

The ATA organization consists of a series of pools located over the country. Each pilot is assigned to a pool which serves as his home base. Most of the time he will spend every night at his home pool but there are occasions when he will end up the day at another pool. ATA has an excellent taxi service of its own by which pilots are collected at the end of the day and taken to their respective pools, a plan which is feasible where flying distances are not so great.

Assignments for ferrying are arranged early every morning and the assignments of each pool are coordinated with other pools to avoid unnecessary trips. Since the location and number of pools is obviously secret, it is difficult to describe in words the actual functioning of the ferrying service, but telephone communications and wall charts keep all pools closely coordinated. Pilots ferrying Hurricanes to the north of England will bring back another type of plane if such are available or ready to move. At all times each pool knows where each of its pilots is at the moment.

It isn't a dead cinch to ferry planes in England. No radio communications can be used. There are no radio beams. The weather is often bad for flying. There are a great many flying hazards such as barrage balloons and forbidden areas where any airplane is liable to be shot down immediately. Nazi-Occupied Europe is only a few minutes away. And contact flying—which is the required method—is not as easy as it is in the United States. The maze of railroads and highways is highly confusing from the air. Landmarks of outstanding nature are difficult to find.

Contact Flying Difficult

American and Canadian pilots thought contact flying in England would be simple. They found out differently. It is easy to get lost. Weather conditions are very variable. Today ATA makes all new pilots fly about the country in a light airplane for two or three months before beginning to ferry aircraft.

ATA is quite self-contained. It has its own weather experts and receives weather reports at each pool direct from the Air Ministry by teleprinter. The decision as to whether to fly remains with the pilot but he has plenty of assistance in the form of detailed weather maps and reports. Hourly reports are received on the condition of airports or of new barriers to flying.

Two training schools are operated by ATA for its own pilots, and the training is unlike that of any other training schools in the world. No pilot is trained to fly a particular airplane. He is trained by classes of airplanes and is rated in this manner. There are six classes in all, and when a pilot has reached Class 6 he is able to fly any and all airplanes in the world. Class 5 pilots can handle any of the four-engined landplanes, while Class 6 is for flying boats.

Favorite training plane of ATA is the North American Harvard of which ATA has 27. No American airplane is so highly respected and regarded in England as the Harvard. Easy to maintain and inspect, it is the best all-round trainer in its class ever built. ATA is only one of its admirers. Another American plane used for another class of training is the twin-engined Lockheed Hudson of which ATA has 19. Because of its flexibility in use and its good flying characteristics the Hudson is well liked.

When a pilot reports in the morning he may be assigned a Halifax to fly from a factory to an operational base, or a Spitfire to transfer from one fighter station to another, or a Typhoon from a storage unit to an operations base. From single-engined fighters to heavy bombers these civilian pilots range from day to day.

Here is the procedure they must follow: Having been trained by types, they carry with them at all times a booklet giving in brief the performance and other characteristics of each type of plane. On being assigned a plane, however, each pilot goes to the technical library at each pool and reads a specially-prepared booklet on the type he is to fly. All operational and irrelevant material has been eliminated from these booklets. A third source of information is a paste-in book at each pool giving the latest information on each plane.

With 90 different types being flown in 1943, ATA pilots had to be experts in conversion tables and the peculiarities of each type.

Has 'Taxi' Service

Not the least interesting feature of ATA is its taxi service which delivers and collects pilots every morning and afternoon. Avro Ansons and four-place Fairchilds are used and the Fairchilds, Models C-61 and C-61-A, have been very popular. ATA now has 100 of these types and is expecting more soon, the new ones being powered with Ranger engines. Those in use now have Warner Scarabs which have stood up reasonably well considering the heavy use the Fairchilds get and the larger loads carried than the planes were originally designed for.

Commander S. R. Cauthery, chief engineer, reports that the Fairchilds have been modified somewhat to enable them to stand up to the exacting conditions under which they are employed. He pulled out of his files the log of one of the ships, HM171, which was delivered to ATA on Dec. 17, 1941. To date it has flown 67,500 miles. "Although this aircraft has been flown by a considerable number of different pilots, in every type of weather, at no time has it been involved in an accident or grounded for any particular fault," Comdr. Cauthery said.

Maintenance has offered no serious difficulty apart from the lack of spares—and lack of spares is the constant cry from British and American units everywhere.

ATA, although civilian, is organized along service lines. All members wear uniforms. There is good discipline. In a large sense ATA is the delivery unit of the Ministry of Aircraft Production, for unlike in the U. S. the RAF does not take delivery of aircraft at the factory doors. ATA expenses are paid from public funds and it is administered by British Overseas Airways Corporation as agents for the Ministry.



**ARBORTOWN'S PARK
BECOMES AN AIRPORT**

The mayor and almost every citizen of small, wide-awake Arbortown wanted an airport. They knew their flying sons and daughters in the Service, and countless others, would want to fly after Victory. They realized that landing facilities promised a prosperous future for Arbortown.

So a section of the park has now been converted into Arbortown's own airport—conveniently located to the

town! Arbortown is ready for the coming air age! After Victory you can land there and at thousands of other progressive towns in your peacetime Piper Cub.

Is your town ready to offer the convenience of landing facilities? If not, it should plan an inexpensive landing strip or airport now—for its citizens and its future! A new booklet, "What Your Town Needs for the Coming Air Age", gives the why, where and how of building landing facilities. For your free copy, write Piper Aircraft Corporation, Department AA44, Lock Haven, Pennsylvania.

GET YOUR AVIATION BOOKLET—"Piper Cub... In War and In Peace." Full color, 32 pages. Covers history of light plane, Piper Cub planes, coming air age, how to fly. Enclose 10c in stamps or coin for postage-handling. Write Piper Aircraft Corporation, Department AA44, Lock Haven, Pennsylvania.

16mm. SOUND FILM—"The Construction of a Light Airplane." For distribution points write: Supervisor, Audio-Visual Aids, Extension Services, Pennsylvania State College, State College, Pennsylvania.

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Points the Way to Wings for All Americans



Helicopter Promises To Revolutionize U.S. Private Flying—Pogue

The helicopter, youngest of aviation's prodigies, came in for some official recognition last fortnight when L. Welch Pogue, chairman of the Civil Aeronautics Board, speaking before the Southern Commercial Secretaries conference in Birmingham, Ala., asserted that it holds the promise of revolutionizing our means of private flying and offers the principal threat to the automobile.

Pogue said the helicopter is far enough along in its development now to make anyone, who has confidence in our aeronautical engineers, believe that it will be a practical flying machine in a few years.

"I do not foresee serious inroads upon the automobile by the conventional type of aircraft," Pogue declared. "I feel this way because just before the war 84% of the automobile travel in this country consisted of journeys of less than 20 miles in length and over 90% consisted of journeys of less than 30 miles in length."

Pogue then gave full recognition to the place the helicopter may attain in the future of aviation by stating: "Conventional type aircraft will not supersede any great number of the 20 and 30 mile trips but the helicopter may do so. It requires no airport but only a backyard for landing."

The CAB chairman said he felt that "all will agree that one of the fundamentally important objectives is to so develop the air transportation systems of the country as to permit them to achieve financial self-sufficiency as systems. Integrations and proper expansions of existing systems and the wise building of new systems will be required if these objectives are to be achieved."

Repeating predictions from a speech made at McGill University in Montreal, Canada, Oct. 19, 1943, Pogue asserted that the airplane will become the preferred common carrier for intercity travelers, that as aircraft and operating efficiency improve, rates will ultimately drop to approximately three, possibly to two and one-half cents a passenger mile, that overseas rates will drop almost immediately in the postwar era to seven cents and ultimately reach four cents, that air cargo will soon be carried at a rate of 35 to 40 cents a ton mile and gradually attain a rate of 15 cents a ton mile.

"The tide of history and the present momentum of our life are moving toward these ends," he asserted.

"In scouting our air future we find: Lots of good talent, an abundance of ambition, factories and equipment second to none, engineering ability of great excellence, an air-minded public, a rising generation which takes aviation for granted as most adults regard the automobile and the railroad, and a governmental policy which recognizes aviation in all its phases as a vital national asset," he stated.

Plan Chicago Freight Terminal

A \$2,000,000 project for a consolidated freight terminal in Chicago, serving air carriers, trucks, freight forwarders, and barges, is being studied by the Sixth Transportation Zone, United States Army.

Parachute Brakes

The resourceful crew of a B-24 Liberator, attached to the U. S. Seventh Air Force, learned that the brakes of their plane had been destroyed in a battle with Japanese planes. They fastened three parachutes to the bomber to provide sufficient drag to halt it in an emergency landing on Tarawa. The crew estimated that the landing speed of approximately 140 mph was reduced 30 to 40 mph by the 'chutes.

Parks Air College Offers Special Summer Term for Students with 3 H. S. Yrs.

Parks Air College will offer a special summer term to students who have completed three full years of high school or preparatory school work, who have remained in the upper two-thirds of their class during that time, and who have earned two units of credit in mathematics and English, the school announces.

Fred C. Parks, registrar, explains that the subject matter included in the term's work is common to each of the three major courses offered by the college, each of which specializes in a field of aeronautical engineering.

"If, following his later graduation from high school or preparatory school, the student wishes to return to Parks Air College to continue with his specialized aeronautical engineering education and training, he will have full credit for the term's work toward earning his Bachelor of Science degree," he said. "If, however, circumstances make it impossible for the student to return to the college, he, nevertheless, will have received three months' intensive training in basic subjects, and in subjects directly treating of aviation."

The subjects offered in the summer term are algebra and trigonometry, elementary drafting and blueprint reading, orientation, tools and shop theory, air transportation history and development, navigation, meteorology, elementary aerodynamics and theory of flight, business writing, physical education, and flight instruction in a "personal plane."

Senate Commerce Group Studies Bill to Extend Civilian Pilot Program

Legislation to extend the civilian pilot training program beyond its expiration date this July awaited action by the full Senate Commerce Committee last fortnight. The legislation was introduced by Sen. Pat McCarran (D., Nev.) whose subcommittee held hearings and recommended favorable action on the measure to the full Committee.

Idlewild Bill Introduced

A bill to permit New York City to float a 30-year bond issue to pay for Idlewild Airport has been introduced in the New York legislature by Senator Frederic R. Coudert, Jr., and Assemblyman MacNeil Mitchell from Manhattan. The cost of the

Texas A. & M. Announces

Tentative Program for Air Planning Conference

A tentative program for the Third War-time Aviation Planning Conference of Texas A. and M. College, to be held May 1 to 3, has been announced as follows:

MANUFACTURING

1. Industrial Training
 - a. Upgrading and Supervisory
 - b. Returned Veterans
 - c. Industrial Training Directors' Conference
 - d. Government Agency Training Conference
2. Contracting
 - a. Shortages and Substitutes
 - b. Contract Termination
 - c. Sub-Contract Termination
3. Personnel
 - a. Procurement
 - b. Selective Service
 - c. Labor Relations
 - d. Labor Pool
 - e. Human Engineering
4. Production
 - a. Improved Methods
 - b. Plastics and Synthetics
 - c. Conversion of War Plants
5. Public Relations
 - a. Army
 - b. Navy
 - c. OWI
 - d. Local Problems

PRIVATE FLYING

1. Regulations
2. Airports and Flight Strips
3. Postwar Markets, Sales, Service
4. Training
5. Postwar Planes, Engines, Materials

COMMERCIAL AIR TRANSPORTATION

1. Route Expansion
 - a. National and Local
 - b. Classified Air Transport
2. Air Cargo
 - a. Problems and Potentials
3. Postwar Domestic Aviation Requirements
 - a. How can manufacturers meet the needs in the transitional period between war and commercial operations?

AVIATION LEGISLATION

1. Requirements of Adequate and Constructive Legislation
2. State and Federal Government Responsibilities

MISCELLANEOUS

1. National Aviation Trades Association
2. Aviation Writers' Association of America
3. National Association of Colleges and Universities in Aviation Training
4. Civil Air Patrol

Jet Propulsion Course

Wayne University, Detroit, plans to offer a jet propulsion course at the beginning of its fall term next September. Arthur A. Locke, head of the university's aeronautics engineering department, and Donald L. Perkins, head of the mechanical engineering department, have planned the course. Gunther R. Graetzer, aerodynamicist, formerly with the Stout Research Laboratories of Consolidated Vultee Aircraft Corp., has been obtained as a research associate for not only the jet propulsion course, but also helicopter flight and aerodynamic calculations for tailless aircraft.

port is expected to be between \$60,000,000 and \$100,000,000. The present limitations on such an issue are 20 years, but it was explained that Idlewild is meant to be self-liquidating and twenty years is too short a period for that purpose.



The B.F. Goodrich Airline of the month

WESTERN AIR LINES, INC.

ONE OF THE PIONEERS of America's commercial aviation, Western Air Lines, Inc., is this month celebrating its 18th anniversary. Today its planes link our good neighbors Canada and Mexico, and serve our Rocky Mountain States with efficient passenger and cargo transport. This in addition to an exemplary job Western is doing in conjunction with the Air Transport Command.

B. F. Goodrich — makers of De-icers, Propeller Feed Shoes, Silver-town Tires and many other aviation products — salutes Western Air Lines for its splendid record and outstanding war effort. For the vital part Western Air Lines continues to play as a pioneer in American transportation, it richly deserves our nomination as this month's "Airline of the Month."

In war or peace
B.F. Goodrich
FIRST IN RUBBER



Excerpts from training film showing ice formation and De-Icer operation. Taken in the B. F. Goodrich wind tunnel, the above photo shows ice accumulation before De-Icer is turned on.



(Above) De-Icer on—tubes begin to inflate and ice starts to crack. (Below) Ice now cracked wide open so windstream can get under it, tear it loose, and carry it away.



NEW 16-MM. DE-ICER SOUND MOVIE NOW AVAILABLE FREE FOR GROUP TRAINING

If you have a visual training program, this interesting film will be extremely helpful. For easy presentation, it is divided into four parts, as follows: I "Ice Formation and De-Icer Operation"; II "Inspection and Maintenance of De-Icers"; III "Removal and Storage of De-Icers"; IV "Installing De-Icers." Any or all parts will be loaned free for a maximum period of two weeks. Army and Navy requests must be filed as follows: Army—Address request through channel to Training Aids Division, 1 Park Ave., N. Y. 16, N.Y. Navy—address requests to Commandant or your own Naval Dist., Attn.: Training Film Officer. Civilians write to The B. F. Goodrich Co., Aeronautical Div., Akron, Ohio.

WHY THE B. F. GOODRICH DE-ICER IS THE BEST ICE-ELIMINATION DEVICE EVER DEVELOPED FOR AIRCRAFT

THE AVIATOR'S ancient enemy—ICE—suffered its first major setback in 1930, when B. F. Goodrich Rubber De-Icers were introduced. And ice has waged a losing battle ever since.

The result of many trials and experiments, B. F. Goodrich De-Icers have successfully met the most extreme icing conditions apt to be encountered in flight. For years they have been standard winter equipment on the airlines. Proof of their dependability is the fact that no commercial passenger plane using De-Icers is known to have been lost because of wing ice formation.

Today De-Icers are serving on Army and Navy bombers, cargo planes and transports—helping to bring them safely through some of the worst icing conditions in the world.

Here are some outstanding De-Icer advantages:

PROTECT ALL CRITICAL AREAS: De-Icers operate as positively and effectively at the wing tips as near the fuselage, because the spanwise tubes are promptly inflated and deflated their entire length regardless of the wing span. In addition, chordwise coverage can be increased to meet the needs of any aircraft to protect the entire area where wing ice forms. Leading edges of fins, horizontal stabilizers, pitot and antenna masts are also protected in a similar positive manner.

NO STRUCTURAL HAZARDS: Whether operated periodically or continuously, flying or grounded, De-Icers offer no hazards to the wing structure. Nothing but cool air under low pressure runs through the wing plumbing system.

NO GAS HAZARDS: Since nothing but cool air flows through De-Icer system, there is no danger of toxic gases leaking into the cabin or passenger compartments.

MAXIMUM FUEL CAPACITY: Since De-Icer plumbing requires very little internal wing space, maximum potential fuel capacity is preserved.

MINIMUM WEIGHT: De-Icers represent only a fractional percentage of a commercial plane's gross weight, usually not exceeding $\frac{1}{2}$ of 1% of the gross weight. They're engineered with weight-reduction in mind, and no heavy reinforcing of the internal wing structure is needed. Considering the full protection offered for plane and crew, De-Icer weight is negligible. Furthermore, since De-Icers can be readily removed in seasons when icing isn't a hazard, the fractional weight which they do add is only carried part of the time.

MINIMUM DRAG: No air scoop or similar device (which is conducive to eddying) is necessary to operate De-Icers. Any slight drag caused by tube inflation is distributed symmetrically and for short intermittent intervals.

Thus, De-Icers afford complete protection of critical leading edges, operate safely, add very little weight, create only negligible drag symmetrically distributed. Proved through years of service, and improved continuously, De-Icers are still the object of study and research by B. F. Goodrich laboratory and field technicians. They're an outstanding example of a B. F. Goodrich development in rubber, one that's already saved the lives of countless airmen—will save countless more in both our military and domestic operations.

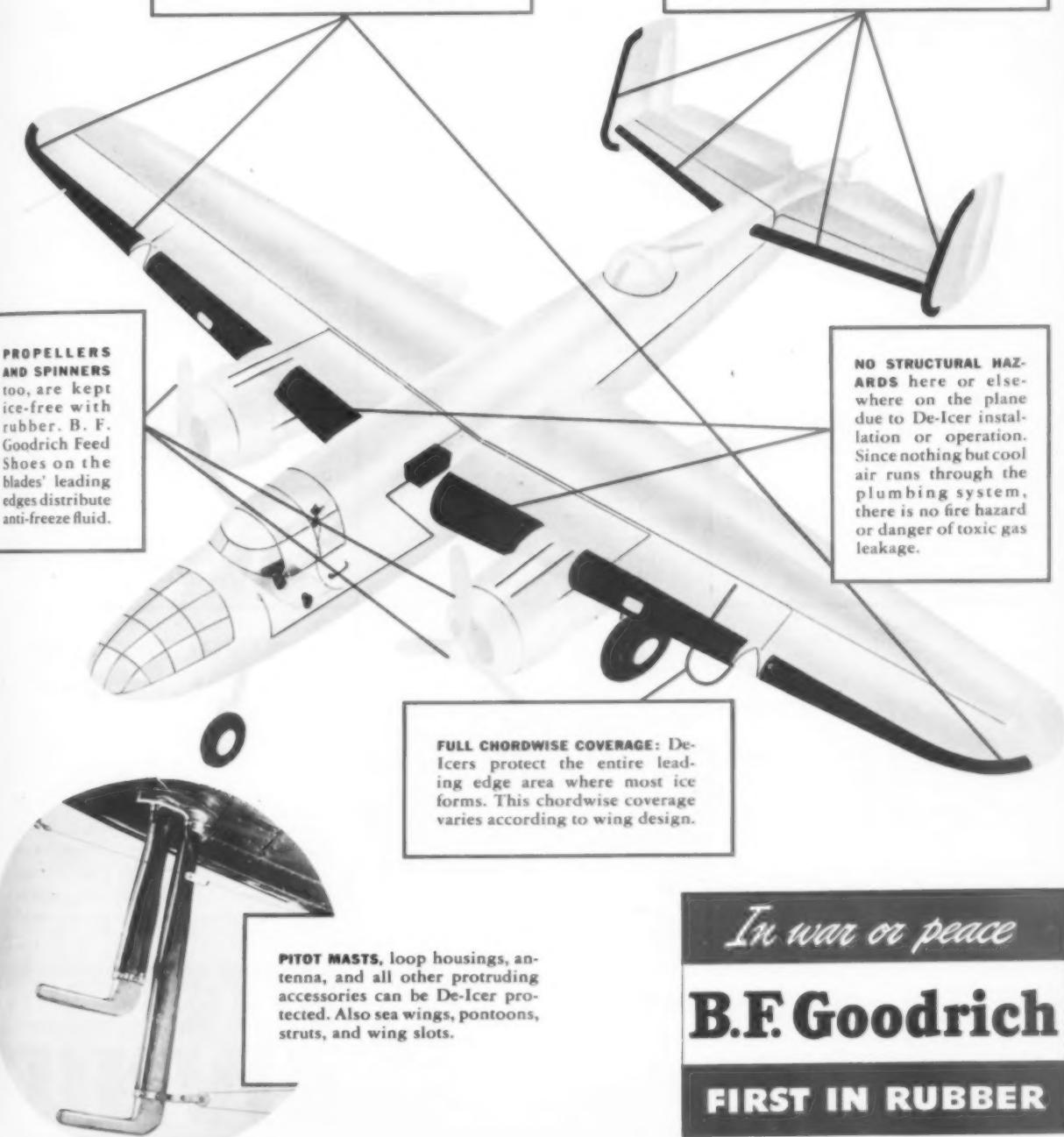


MAKERS OF B. F. GOODRICH TIRES

This diagram shows how B. F. Goodrich De-Icers PROTECT ALL CRITICAL AREAS

WING TIPS get just as positive and effective protection as any other critical area . . . regardless of wing span. The air which inflates and deflates De-Icer tubes presents no difficult ducting problem.

HORIZONTAL STABILIZERS and fins need full ice protection . . . and get it with B. F. Goodrich rubber De-Icers. Here again, it's a simple matter to pipe air back to the tube openings.

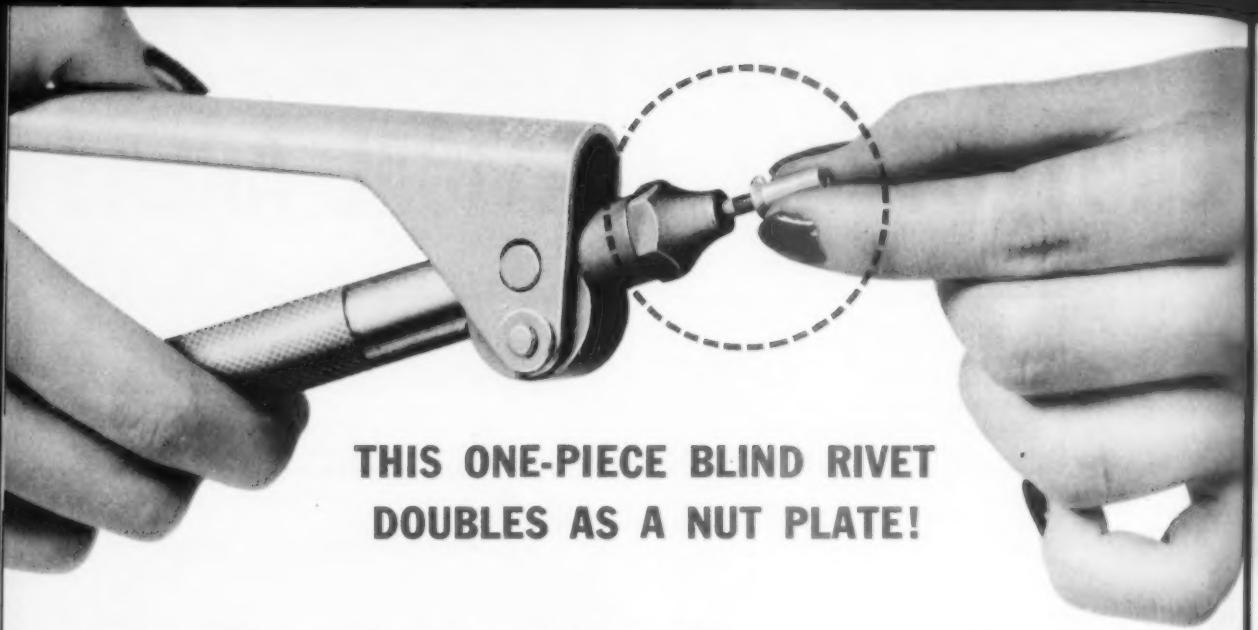


In war or peace

B.F. Goodrich

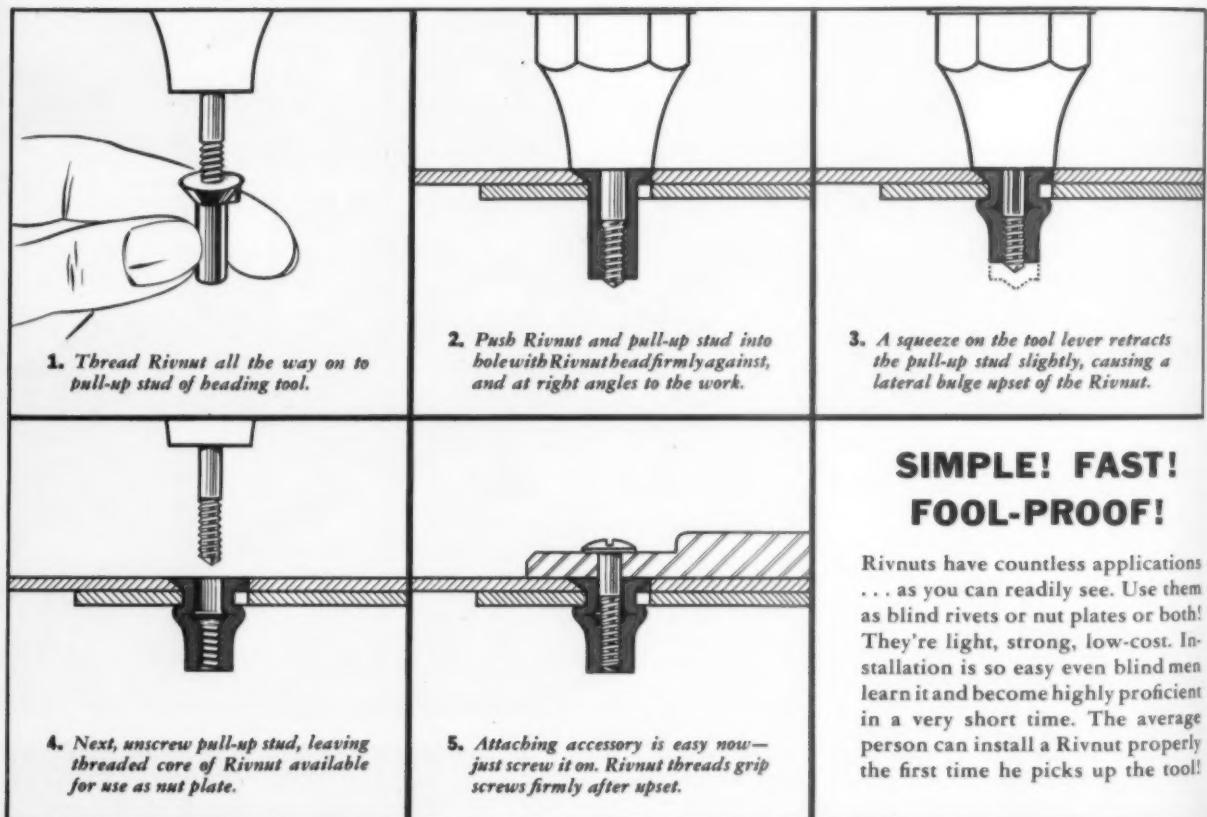
FIRST IN RUBBER

TIRES AND OVER 80 RUBBER AND SYNTHETIC RUBBER PRODUCTS FOR AIRPLANES



THIS ONE-PIECE BLIND RIVET
DOUBLES AS A NUT PLATE!

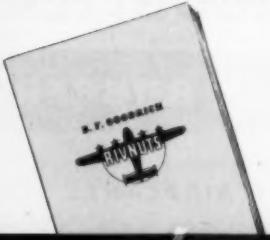
here's how the Rivnut works:



SIMPLE! FAST! FOOL-PROOF!

Rivnuts have countless applications . . . as you can readily see. Use them as blind rivets or nut plates or both! They're light, strong, low-cost. Installation is so easy even blind men learn it and become highly proficient in a very short time. The average person can install a Rivnut properly the first time he picks up the tool!

GET THE FACTS . . . FREE!



There's a lot more you'll want to know about Rivnuts, and knowing it may save you plenty in money, time and trouble. So write for a complete data book today. Gives facts on sizes, weights, strength, grip ranges, etc. Address The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.

B.F. Goodrich
RIVNUT
IT'S A RIVET... IT'S A NUT PLATE

Braniff Appeals CAB Order In Essair New Route Case

BRANIFF AIRWAYS, Inc. filed on March 25 a petition in U. S. Court of Appeals, District of Columbia, asking that an order of the Civil Aeronautics Board granting Essair, Inc. of Dallas, Tex., a certificate for an air transport route be set aside and vacated.

The petition assigns 12 points of error. The Board's decision is attacked principally on the grounds that the carrier failed to meet the "fit, willing and able" requirement of the Civil Aeronautics Act.

Only once before has an action of the Civil Aeronautics Board been taken to a court of appeals for review. This was represented by a petition filed by Pan American Airways, Inc. in the case of a certificate granted to American Export Airlines, Inc.—then a subsidiary of American Export Lines, Inc., the steamship company. In that case the Board was generally upheld although a portion of the case involving the question of control was remanded for further Board consideration.

Essair was granted a temporary certificate Nov. 5, 1943, to operate an air transport service between the terminal points Houston and Amarillo, via Austin, San Angelo, Abilene and Lubbock—all in Texas. The temporary certificate is to terminate Dec. 31, 1946.

The hearing in this case was held from Nov. 4 to Dec. 4, 1940. Then on Dec. 12, 1941 before the Board had decided the case, all action on pending applications was frozen for the war period. On Aug. 29, 1942 the Board announced that it would restore this case to its active calendar. On May 10, 1943 it denied Braniff's application for a route involving some of these same cities but concluded that the decision on Essair should be deferred. Later oral argument was held and sometime later, the Board announced its decision to give a temporary certificate to Essair "on an experimental basis."

Counsel for Braniff asserts that the President of Essair testified on Nov. 27, 1940 that his company had no cash, no assets, no employees and only one airplane, which was attached in court proceedings.

The basis for Essair's claim to financial ability to conduct the proposed operation was a letter from a firm of dealers in investment securities, dated the day before the hearing, which stated if a permanent certificate of public convenience and necessity should be awarded to Essair, the firm would "desire to enter into an underwriting agreement for the financing" of Essair unless conditions at that time in their judgment rendered "the contemplated public offering impracticable or inadvisable," the Braniff petition stated.

The petition states that the Board's decision does not disclose basic facts to support its barren finding that applicant is fit, willing and able to perform the designated air transportation, that testimony taken in 1940 could not reflect the company's present financial condition.

Because Essair planned to sell its stock on the open market, Braniff claims that there is no evidence that the company would be an American citizen after the

stock had been sold. Further Braniff claims that the Board granted Essair a temporary certificate when the application asked for a permanent certificate, that in so doing the Board exceeded its authority—because no hearing was held on the application for a temporary certificate.

Essair operated an intrastate air service in Texas from February to July in 1939. Braniff, in its petition, claims the service was suspended for lack of patronage.

The Braniff petition was signed by Roger J. Whiteford and Philip S. Peyer of the firm Whiteford, Hart and Carmody.

Braniff to Inaugurate Service Between Texas and Mexico April 10th

Braniff Airways, Inc. has filed notice with the Civil Aeronautics Board of its intention to inaugurate air transport service between Laredo, Texas and Nuevo Laredo, Mexico on April 10. This will enable Braniff to make a direct connection with Compania Mexicana de Aviacion, eliminating the necessity of land transport of air passengers between the terminals of the two airlines. Braniff received a temporary certificate from the Board several months ago and the delay in inaugurating the service has been occasioned by the need of new ground installations at the Mexican airport.

Back from Aerial Burma Road



Three pilots of the China National Aviation Corp., Pan American Airways' affiliate, are shown after their arrival in the United States where they soon will be assigned planes to fly back to the Orient. They have been flying vital lend-lease supplies via the aerial Burma Road over the Himalayas during recent months. Left to right—Captains Julius Petach, Peter Goutiere, and Ray Allen.

CAB Calendar

Apr. 3—Hearing on applications of Mid-Continent, Delta, National and Kansas City Southern involving service between Kansas City and New Orleans (Docket 651 et al).

Apr. 4—Prehearing conference on application of All American for pickup stop at Athens, Ohio.

Apr. 5—Oral argument on exceptions to Local-Feeder-Pickup report. (Docket 857).

Apr. 12—Hearing on applications of American and TWA for stops at Joplin, Tulsa and Oklahoma City between St. Louis and Amarillo. (Docket 413).

Apr. 15—Prehearing conference on applications of Alaska Star Airlines and Woodley Airways for airmail routes between Fairbanks and Kodiak, via Anchorage.

Apr. 17—Hearing on applications of American, Eastern, Colonial, PCA, UAL, Page Airways, Inc., Union Airways, Inc., Hyland Flying Service, Inc., for routes between Washington, D. C. and Canada. (Docket 609 et al).

May 1—Prehearing conference on applications of Hawaiian, TWA, Matson Navigation Co. and Northwest for routes from Los Angeles, San Diego, San Francisco, Portland, Seattle to Honolulu. (Docket 851 et al).

Many Married Couples Apply For Work on Alaska Airways

In response to some well placed publicity appeals, the Bureau of Federal Airways, Civil Aeronautics Administration, has been swamped with applications from married couples as well as scores of individuals for jobs on the civil airways of Alaska.

W. P. Plett, superintendent of Airways, 8th Region, Anchorage, Alaska had come to Washington to launch a recruitment program for trained radio telegraph operators, and radio technicians. Charles Planck, of CAA's Information and Statistics service, gave the appeal to press and radio and then the long distance calls, telegrams and letters started coming in.

Because some of the airway stations to be manned are located in lonely spots, CAA officials tried to interest married couple teams on the basis that their combined salary would total approximately \$4,300 a year. More than enough applications have been received, it was said.

Rio, Sao Paulo Night Flights

Panair do Brasil has started experimental passenger and cargo flights at night between Rio de Janeiro and Sao Paulo, uniting Brazil's largest cities by night as well as day air service. The experimental night flights are being made three times weekly, leaving Rio late in the afternoon, carrying only passengers on the 80 minute flight, and returning to Rio from Sao Paulo the same evening, carrying only cargo. Regular schedules for night flights will be announced shortly, the airline reports.

CAB Reduces Mail Pay of NAL, Braniff, and Panagra

THREE MORE CARRIERS—National Airlines, Braniff Airways, and Pan American-Grace Airways received reductions in their mail pay by order of the Civil Aeronautics Board during the last few weeks.

Braniff became the 11th in the growing group of carriers to have its system rate reduced to the 0.3 mill per pound mile base. Panagra had its system rate reduced from 50.77 cents per airplane mile to 31.67 cents per airplane mile while National will operate under the new rate of 9.50 cents per airplane mile from Nov. 1, 1943.

In fixing Braniff's rate, the Board noted that the carrier would suffer a reduction in mail pay for the period February-December of 1943 in the amount of \$590,000 while after Jan. 1, 1944 it is estimated that the carrier's revenue will be reduced approximately \$685,000 a year. Braniff's former rate was 24.83 cents per airplane mile which was set by the Board from June 1, 1942.

The Board opinion in the Braniff case stated: ". . . We conclude that respondent's required investment for scheduled air transport operations is \$1,619,819. In addition respondent's adjusted investment includes \$350,594, which represents a portion of the net book value of equipment sold to the Government. During the present emergency, respondent has been, and will be in the foreseeable future unable to invest these funds in additional equipment. They are, however, available and will be needed for this purpose. We, therefore, find that the total amount of such funds should be taken into account as part of respondent's investment for rate making purposes. This results in a total investment of \$1,970,413 for scheduled air transport services.

Profit Estimated

"On the basis of the estimated results of respondent's scheduled air transport operations, we find that it may be expected to operate under present foreseeable circumstances at a profit of \$263,887 per annum, or 6.10 cents per revenue mile before mail pay and income taxes. This estimated profit amounts to a return, before mail pay, of 13.39 percent on the approved investment in scheduled air transport service as of August 31, 1943. Thus it is apparent that the fixing by us of a fair and reasonable rate of mail compensation does not require the allowance in the mail rate of amounts heretofore found necessary in some mail rate cases to permit respondent to cover deficiencies in revenue in its commercial operations."

In the case of Panagra, the Board denied the carrier permission to include excess earnings of \$1,992,064 representing the period from Aug. 22, 1939 through June 30, 1942 in its investment for rate making purposes.

The reduction to 31.67 cents per airplane mile will reduce Panagra's mail pay by \$390,000 for the period June-December, 1943 and \$670,000 a year after Jan. 1, 1944.

Treatment of the excess earnings was the only point in controversy with reference to the Board's show cause order of June 1, 1943 when the new rate was tentatively fixed.

Panagra contended that because of unusual circumstances, the excessive earnings realized during the period from Aug. 22, 1939, through June 30, 1942 should no longer be excluded from the investment upon which it was allowed a return and that the amount of the investment should be computed as of May 31, 1943, the date immediately prior to the effective date of the rate to be fixed in this proceeding.

The Board refused to characterize Panagra's investment of excessive earnings as an "unusual circumstance" and quoted again from its earlier, tentative opinion as follows:

". . . In the future if the carrier undertakes new ventures at the request of this Government which do delay or prevent its attainment of self-sufficiency, the status of the excess earnings can be re-examined to determine whether by reason of its efforts on behalf of this Government the carrier is then entitled to a return upon all or a part of the excess earnings."

No Clear-cut Evidence

Asserting that the carrier introduced no clear-cut evidence in this proceeding tending to prove that new ventures and undertakings had prevented it from attaining self-sufficiency, the Board stated: ". . . That respondent did, in fact, take various steps looking towards its present and future development which were in aid and furtherance of Government policies was only to have been expected, since Government policy obviously looks with favor upon the development of a sound and expanding air transportation system in the areas served by the respondent. The fact that respondent is already serving these general objectives of the Government accounts for the substantial Government aid which respondent has received and continues to receive."

In another part of the opinion, the Board denies the carrier's request to review estimates of revenues and expenses based upon later experience figures because it holds that "it would be improper to close our eyes to simultaneous changes in other items which were also not before us but which might offset the increases in expenses or decreases in revenues shown by the carrier."

The Board found that the carrier will fly approximately 3,511,600 annual airport-to-airport miles, that on an investment base of \$3,431,090 as of Dec. 31, 1942 and based on a 10% return, its reasonable earnings will amount to \$343,109 per year after payment of Federal taxes. Allowing for Federal income tax at the rate of 24%, as established by currently effective law, the earning's element of respondent's rate will amount to \$451,459 or 11.43 cents per revenue mile.

In setting the new rate for National, the Board fixed the mail pay for the period from Jan. 1, 1943 to Oct. 31, 1943 at 11.41 cents per airplane mile with the new rate of 9.50 cents per airplane mile to become effective Nov. 1, 1943. The new rate is based on 68,222 miles per month on a base poundage of 300 pounds of mail plus an excess poundage rate of 0.3 cent per airplane mile for each pound, or fraction thereof, of mail carried in

Wanted: Co-Pilots

China National Aviation Corp., Chinese affiliate of Pan American Airways, has announced that co-pilots are needed "for immediate assignment" to transport work "over the Hump" between India and China. The company, which uses DC-3 equipment, wants men under 30 years of age with at least two years of college and 1,000 flying hours, preferably with instrument rating. Company's address is Chrysler Bldg., New York, N. Y.

U. S.-India Service Revealed by PAA

An 11,500-mile air service from the U. S. to India, known as the "Cannonball," is being operated for the Air Transport Command by Pan American Airways, the company revealed on Mar. 13. "It is the super-special aerial supply service of the . . . Air Transport Command . . ." Pan Am stated.

The schedule is operated with four-engine equipment, which flies from the U. S. to Brazil, across the Atlantic, Africa, Arabia and into India, completing the one-way trip in 3½ days. The 24,000-mile round trip is made in 180 hours, return flights carrying strategic war materials.

"It has clipped a good day from the best previous schedule time to the battle area on the opposite side of the globe," the company said. "Equally important, by stepping up all related handling and servicing routines, it is making two airplanes do the same cargo-carrying job that three were capable of doing less than a year ago."

Factors speeding up the schedule are (1) planes are booked out on schedule, "night or day, regardless of winds or weather," (2) a "high precision" routine of loading, unloading and servicing, and (3) removal of 60 to 100 pounds of paint from planes, increasing speed five miles an hour. Planes are in the air 11 hours every day.

About 100 complete flight crews are used on the PAA Africa-Orient division, and this division, operated exclusively for ATC, has completed more than 2,200 Atlantic crossings and has logged more than 14,500,000 miles of flying for the Army since November a year ago.

excess of the base amount.

The new rate of pay for the January-October period of 1943 represents a reduction of approximately \$156,000 for this period compared with the old rate and \$145,000 per year from Nov. 1, 1943 when the new base rate becomes effective.

The Board said that for each month during which National's average daily designated mileage exceeds 6822 miles (a) an effective rate per airplane mile computed at the nearest hundredth of a cent, to be paid for an adjusted base poundage of mail computed to the nearest hundredth of a pound, such effective rate and adjusted base poundage to bear the same relation to 9.50 cents per airplane mile and 300 pounds, respectively, as 6822 miles bears to the average daily designated mileage; (b) plus an excess poundage rate of 0.3 cent per airplane mile for each pound, or fraction thereof, in excess of the adjusted base poundage.

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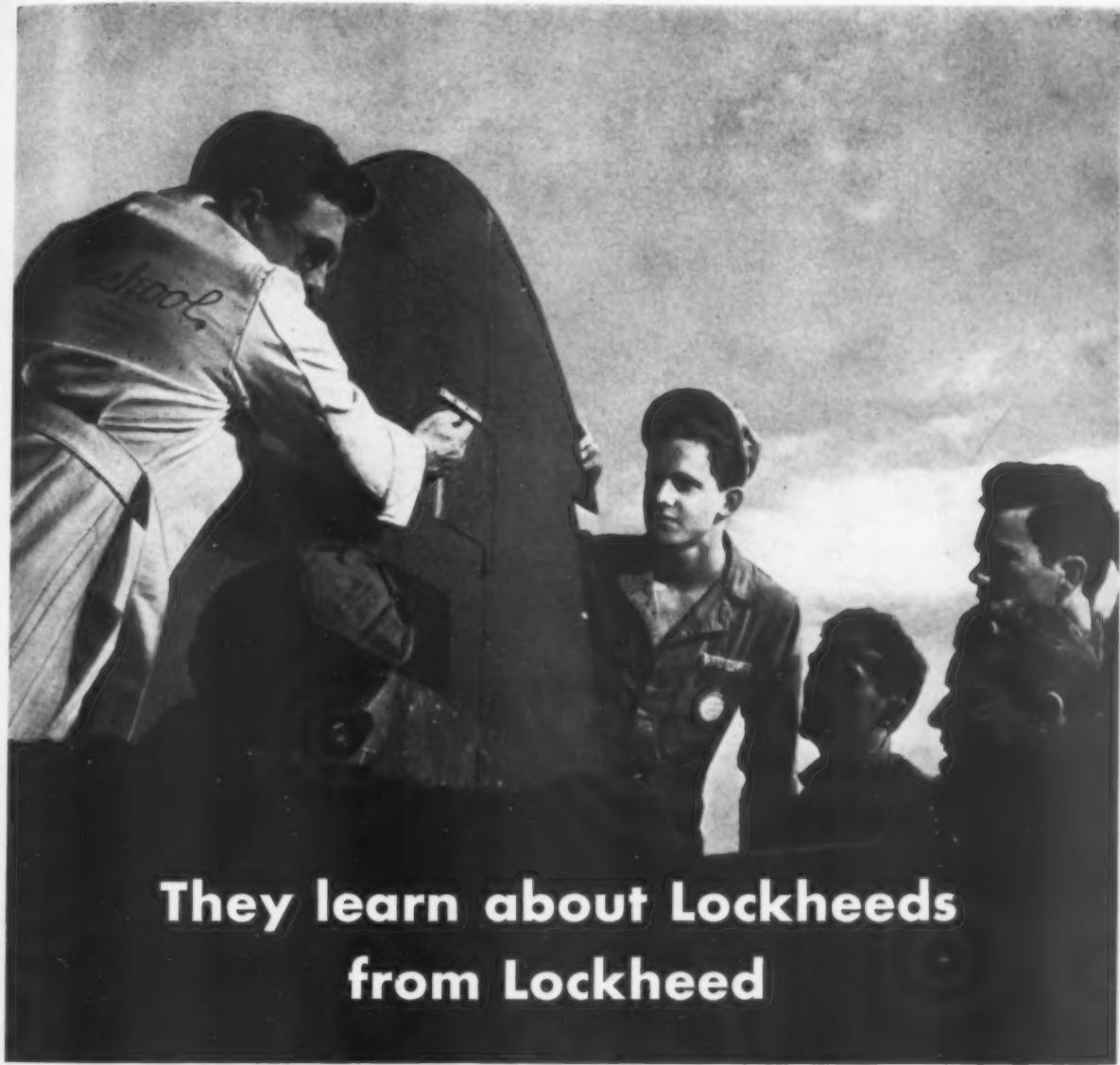
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They learn about Lockheeds from Lockheed

They are U. S. Army and Navy ground crews, the best-trained aircraft mechanics in any man's air corps. After three to six months in Army or Navy schools, these men come to Lockheed for intensive one-month postgraduate courses. At our schools—which we operate under Army-Navy supervision at our plants, with company experts as instructors—they learn special tricks for keeping Lockheeds in top flying and fighting shape.

Army mechanics study the P-38 Lightning fighter; Navy men, the PV-1 Ventura bomber. They study every part—from tip to tail—separately. Diagrams

and mock-ups, cutaway engines, complete wiring and radio installations serve as their textbooks.

Today, on every fighting front, Lockheed warplanes are kept in top flying and fighting shape by skilled Lockheed-trained military ground crews. Tomorrow, at war's end, civilian Lockheed—private planes and airliners alike—will be kept at their flying best, too. There will be Lockheed-trained experts to keep your plane in top flying trim wherever you may fly it. For tomorrow, as today, Lockheed will not only build planes, but get them ready to fly, and keep them ready to fly.

LOOK TO **Lockheed** FOR LEADERSHIP

LOCKHEED AIRCRAFT CORPORATION, BURBANK, CALIFORNIA

8 Applications for New Routes Filed Mar. 7 to 23

THE DOCKET SECTION of the Civil Aeronautics Board experienced another light fortnight in the matter of new applications for air transport routes. Only eight applications and one amended application were filed between March 7 and March 23.

All of the applications were submitted by non-certified companies—a rather unusual circumstance. The bulk of them came from bus companies desiring to use the airplane in an integrated passenger or freight business. Among the applicants is one for a certificate to provide a "fly-away" service between factory and dealer.

A brief summary of the applications follows:

Coast Air Express

This company operated as a partnership by John R. Henry, 3520 N. Broadway St., Oklahoma City and J. E. Stephens, 1644 Clio St., New Orleans, has filed an application for a feeder air transport service between New Orleans and Houston, via Houma, Patterson, New Iberia, Lafayette, Crowley and Lake Charles, Louisiana and Orange, Port Arthur and Galveston, Texas. Applicant proposes to use the twin-engine Beechcraft 18-S and single-engine Noorduyn MK-4 type planes in transport of passengers, mail and property. (Docket 1342)

Commercial Carriers

Applicant, through James W. Wrape, Inc., of 1407 Sterick Building, Memphis, Tenn., filed for a certificate which would permit fly-away or ferrying service of new or used aircraft between all points in the U. S. and Alaska. (Docket 1337)

W. A. Hunter, Jr.

This applicant of Route 3, Columbia, Tenn., asked for a certificate to transport, by air, passengers, freight and mail between terminal points; Nashville, Florence, Huntsville, Birmingham and intermediate points: Columbia, Pulaski, Decatur and Cullman. Applicant proposes to use single engine planes of the Bellanca "Senior Skyrocket" type until business warrants use of Douglas DC-3 aircraft. (Docket 1339)

Kodiak Airways

This Alaska company, through Counsel John E. Manders, Anchorage Hotel, Anchorage, Alaska, has filed an application for air transport of persons, property and mail between terminal point Kodiak and Cook Inlet, Prince William Sound, Alaska Peninsula, Aleutian Islands, Kuskokwim and Yukon Rivers and to and from Anchorage and Kodiak, also between Kodiak, Uzinki, Afognak, Fort Wakefield, Iron Creek, Port Bailey, Chadwick Bay, Uganik, Uyak, Karluk, Carmel, Alitak, Old Harbor, McCord, Fort Hoborn and Sherborn. Applicant states that service was inaugurated over a portion of the route on March 6, 1944. The company filed an application for an exemption order which would permit it to operate these routes. (Docket 1340)

New England Airlines

Applicant of 1384 Massachusetts Ave., Harvard Square, Cambridge, Mass., has

filed with CAB an application requesting a certificate for air transportation of mail, persons and property between Boston and Schenectady, via Fitchburg, Greenfield and Troy, between Boston and Schenectady, via Worcester, Springfield, Pittsfield, and Albany; between Boston, Taunton and Providence. Arthur E. Desrosiers, William M. Wood and Dr. John R. Dennott are partners in this enterprise. (Docket 1336)

Jack Neal and Son

This partnership of 455 South Main St., San Antonio, Texas, has filed an application for air transport of passengers, mail and property in a local and feeder airline service over four routes totaling 2,066 miles as follows: a circular route originating and terminating in San Antonio, via Houston, Corpus Christi, Laredo and other intermediate points, between Brownsville and Del Rio, via Laredo and Rio Grande; between San Antonio and San Antonio, via Columbus and Houston and between San Antonio and Van Horn, via Sonora, Del Rio, Van Horn and El Paso. (Docket 1344)

Ohio Airlines

This company of 1121 Keith Building, Cincinnati filed an amendment to its application in Docket 1072 wherein it requests a certificate to engage in the air transportation of persons, property and mail between Covington and Akron, Ham-

AA's 'Time Saver' Clock



This clock shows employees of American Airlines' flight control room at Burbank, Calif., not only Pacific War Time, but Eastern, Central, and Mountain Time as well. In addition, it is a 24-hour clock for military operations. Flight control clerk Jacqueline Bentz is shown checking the arrival of an AA plane.

ilton, O., and Richmond, Ind., Middletown, O., and Dayton and Xenia, O., and Youngstown via numerous intermediate points. Applicant proposes to use Model 18-S Beechcraft, 8 passenger and twin-engine 8 to 14 passenger planes.

Public Service Transportation Co.

Public Service Interstate Transportation Co. and/or Public Service Coordinated Transport Co., 80 Park Place, Newark, N. J., filed for a certificate to transport by air persons, property and mail between points in New York, New Jersey, Pennsylvania and Delaware. The termini of the routes out of New York City include such cities as Greenwood Lake, Phillipsburg, Cape May, Wilmington with scores of intermediate points. (Docket 1338)

The North Little Rock Transportation Co. Inc.

Applicant of 1408 Donaghay Building, Little Rock, Ark., has filed for an "airborne taxi service" in the state of Arkansas. The applicant proposes to use helicopters or a similar type aircraft in transport of passengers and personal property. Frederick U. Andres is president of the company. (Docket 1343)

All TWA Directors, Officers Reelected

All directors and officers of Transcontinental and Western Air, Inc., were reelected at the annual stockholders' and directors' meetings March 16, at Kansas City. Jack Frye, president, was reelected for his 10th consecutive year. Other officers reelected include:

T. B. Wilson, chairman of the board; E. Lee Talman, executive vice-president; Otis F. Bryan, vice-president, war projects; John A. Collings, vice-president, operations; V. P. Conroy, vice-president, traffic; C. E. Fleming, vice-president; J. C. Franklin, vice-president, engineering; Jack Nichols, vice-president; J. M. Lockhart, secretary and treasurer; C. A. Gress, assistant secretary and assistant treasurer; E. C. Peet, comptroller; Myra E. Black, assistant secretary; C. W. Herre, assistant secretary.

Members of the airline's executive committee, who were also reelected by the board, include Jack Frye, chairman, E. Lee Talman, and N. S. Talbott.

Directors reelected were:

LaMotte T. Cohu, chairman of board and general manager, Northrop Aircraft Inc., Hawthorne, Calif.; J. A. Collings, vice-president, TWA, Kansas City; V. P. Conroy, vice-president, TWA, Kansas City; Powel Crosley, Jr., president, Crosley Corp., Cincinnati, O.; Ralph S. Euler, vice-president, The Union Trust Company of Pittsburgh, Pittsburgh, Pa.; Jack Frye, president, TWA, Kansas City; Sidney Maestre, president, Mississippi Valley Trust Co., St. Louis, Mo.; G. H. Scribner, senior partner, Winston & Co., Chicago; N. S. Talbott, Lt. Col., U. S. Army Air Forces; E. Lee Talman, executive vice-president, TWA, Kansas City; T. B. Wilson, Brigadier General, U. S. Army.

PAA Using Stewardesses

Pan American Airways is using air stewardesses, on its international routes for the first time. Seven young women now fly regularly on planes to Nassau, Havana, and Merida, Mexico.

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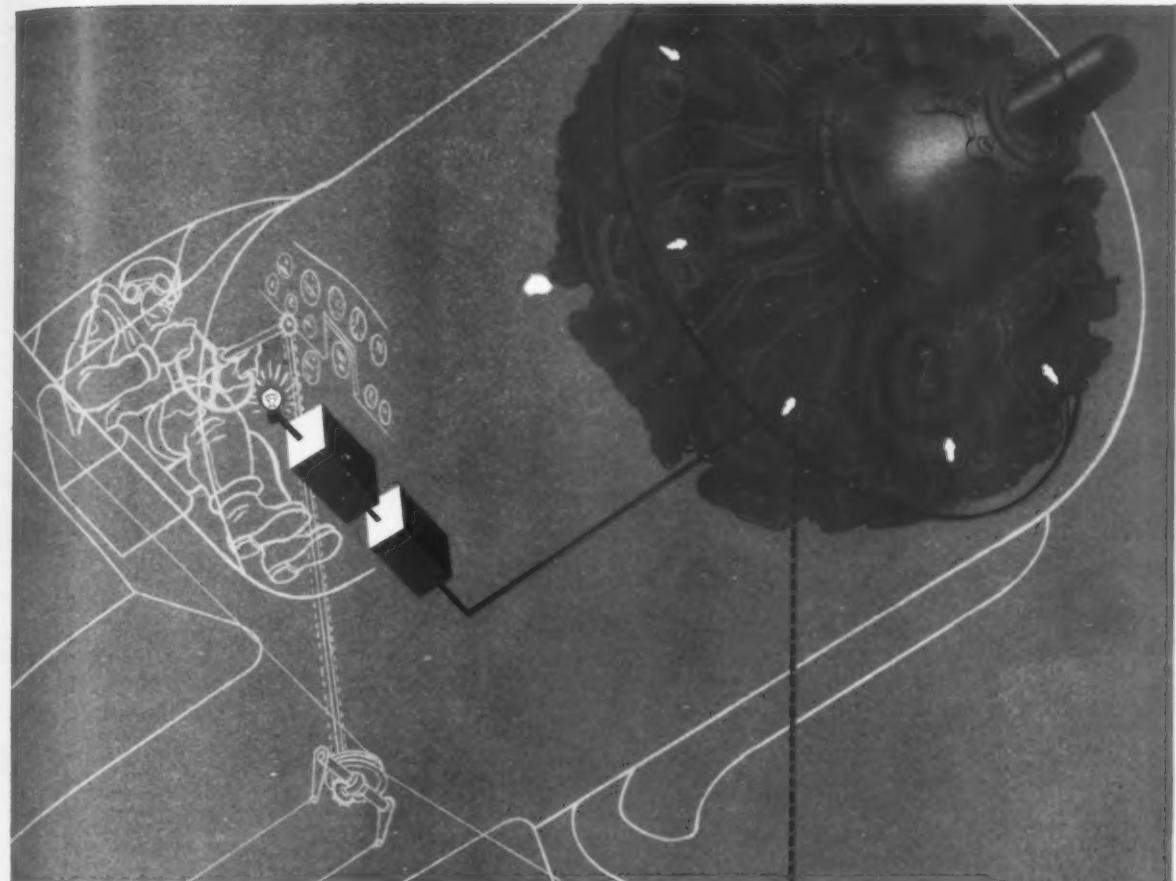
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Seeing eye for an engine's blind spot

You can't determine an aircraft engine's full power potential with a slide rule—no more than you can judge a sprinter by the length of his legs. An individual motor's capacity is sometimes far greater than its listed horsepower.

So, rated horsepower is often a blind spot; the point beyond which a pilot dare not pour on power lest detonation dampen engine performance—or even wreck it. But, Standard of California scientists, gauging new aviation fuels, had to know the *actual* output ceiling of aircraft engines—so they worked out a Detonation Indicator.

With this device on guard, motors can be fully unleashed—often far beyond listed horsepower. Speed and critical altitude can be boosted, fuel economized—and detonation checked. When the engine is pushed to the detonation point, the in-



dicator flashes a warning to the pilot. Then he knows it's time to throttle down.

We've licensed the Lane-Wells Co. of Los Angeles to manufacture and sell this Detonation Indicating equipment so that it can be made available to others on war jobs. In many laboratories it's helping improve aviation gasolines—and the motors that use them. And its story is just one page from our research notebook. As you read this, Standard of California is developing new ways to push back sky frontiers, new seeing eyes for aviation's blind spots.

STANDARD OF CALIFORNIA



Justice Dept. Hints 'Restraint' In TWA Deal for Constellations

THE DEPARTMENT of Justice, on the basis of the restraint of trade issue, made its second appearance in an airline case last fortnight. It was in connection with the hearing on the application of the Hughes Tool Co. for Civil Aeronautics Board approval of its control of Trans-continental & Western Air, Inc.

Hughes Tool Co. acquired control of TWA—a fact which was stipulated into the record by agreement of all parties—through its purchase of 440,050 shares of TWA stock at a price of \$5,504,658.

Most of the testimony, elicited by Public Counsel Louis W. Goodkind, concerned the reasons behind the deal and the negotiation of a subsequent agreement between Hughes Tool Co., TWA and Lockheed Aircraft Co. whereby TWA is to receive the first 15 of 40 Constellation planes, with the balance going to the Hughes company. Noah Dietrich, executive vice president of Hughes, testified that Jack Frye, of TWA, had made the first overture to Howard Hughes concerning purchase of an interest in the air carrier and that Hughes agreed that such a deal would be mutually advantageous.

Answering a question of Goodkind, Dietrich said he did not believe Frye sought to make this deal to finance the later purchase of the Constellations. He said that the decision to negotiate with Lockheed came later.

When Goodkind asked Dietrich whether the Navy had cancelled the contract with Hughes Aircraft Co. for flying boats, George A. Spater, counsel for Hughes, objected to the witness answering the question in public hearing. CAB Examiner F. A. Law, Jr. then ordered an executive session and reporters were excluded from the hearing room for a short time.

'Restraint of Trade?'

Sadie B. Arbuthnot, counsel for the Department of Justice, read into the record a statement which urged the Board to keep jurisdiction of the case and to consider whether the agreement between TWA, Hughes Tool Co. and Lockheed Aircraft Co. for delivery of the first 15 Constellations might be in "restraint of trade." The Department of Justice first intervened in an airline case during the Panagra U. S. terminal case.

Because of its possible significance in future airline cases, the statement of the Department of Justice is herewith printed in full:

"The Department intervened in this proceeding because of possible unreasonable restraints on competition arising out of control of an air transport company by a company manufacturing air transport equipment. As we stated in our petition, participation by the Dept. of Justice in this proceeding is in furtherance of the anti-monopoly policy of Congress, as expressed in the Civil Aeronautics Act, which the Board administers, and the Federal anti-trust laws, which the Department must enforce. In other industries involving similar control, it has been necessary to seek relief in the courts and divestment of manufacturing and operating companies ordered. In the light of its experience, the Department urges

here that a repetition of such restraints and monopolies, found to exist in other industries, be avoided in this new and dynamic industry.

"It appears from the exhibits submitted by the Hughes Tool Co. in this proceeding that a subsidy has been given TWA through the assignment to it of the Hughes-Lockheed contracts for the manufacture and purchase of 40 Constellation-type planes. However, this assignment, though a subsidy, is not the type of subsidy which a controlled operating company might ordinarily receive from a controlling manufacturing concern, inasmuch as such an assignment could have been made to TWA by Hughes Tool Co. as a disinterested party in no way associated with the aircraft industry.

30-Month Clause Cited

"Competition of independent airlines may be restrained because of the provisions of Paragraph 9 of the TWA-Lockheed contract (Exhibit 2-A) which, in substance, prohibits sale or lease of any Constellation-type planes for use in the United States for 30 months after the delivery of the last airplane purchase by TWA under said contract. The provision of said Paragraph 9 of the contract under which Lockheed agrees to bind each purchaser of Constellation-type planes, except the Government and TWA, 'preventing commercial use of the airplane in the United States and preventing resale directly or indirectly of any of said airplanes for delivery to or use in the United States during said period of 30 months' also restrains competition by independent airlines. Substantially similar provisions are contained in the original Hughes-Lockheed contracts. (Exhibits 3-A) The Department of Justice respectfully submits that these restraints should be considered by the Board, together with other facts in the case, in determining the nature and scope of its order.

"On Page 3 of Exhibits 3-A there appears a 'Statement of postwar plans of Hughes Aircraft Co. (including Culver City, St. Andrews and Armament plants) and also for Hughes Tool Co. in regard to Aircraft Strut and Dickson Gun Plants.' This statement, together with the statements made on Pages 3 and 4 of Exhibit 3, indicates that, at the present time, Hughes Tool Co., insofar as the manufacture of aircraft and aircraft parts is concerned, is engaged solely in war production work for the United States Government and Government contractors. These exhibits also show that the only plant now operated by the Hughes Tool Co. and/or Hughes Aircraft Co., which may possibly remain in operation upon the termination of war production orders, is the plant located at Culver City. It is stated that this plant 'is not equipped for either large scale or economical production of aircraft or aircraft parts' but that 'while no plans have been formulated it is likely that this plant will be continued to be used as an experimental and development laboratory.'

"In view of the above circumstances, the Dept. of Justice respectfully recommends that, should an order be entered approving the acquisition by Hughes Tool Co. of control of TWA, such as an order should con-

Board Takes Over Allocation of Planes Returned by Army

The Civil Aeronautics Board is now responsible for deciding which airlines are to receive airplanes returned by the Army for commercial use, the War Dept. announced last fortnight. The move was predicted in *American Aviation* Mar. 15.

The War Dept. announcement stated:

"The Civil Aeronautics Board will in future be responsible for the allocation and reallocation among the airlines of such planes as the War Department determines are available for release from military service, or available from new production. It will also determine routes, schedules, stops, and type of service to be rendered to meet the heavy load of wartime needs for air travel and air freight. Such decisions, however, remain subject to War Department redetermination 'for reasons of military necessity.' Except for emergency military missions, the C.A.B. will also approve or disapprove charter flights by civilian air carriers.

"The War Department retains all other powers conferred upon it by Executive Order issued by the President shortly after Pearl Harbor, including control of air priorities and control of all service for military purposes carried on by the airlines. It also will continue in control of all air service to military airfields.

"The Civil Aeronautics Board, it was pointed out, has worked in close cooperation with the War Department since the initial war service air pattern was established in June, 1942. Provision is made for continued close liaison between the Army Air Forces and the C.A.B., particularly with respect to the needs of the airlines for additional equipment to enable America's civilian airpower to stand up to its vital task in the prosecution of the war.

"Applications for favorable consideration of new proposals on any air transportation matters outlined in the foregoing, now must be brought first to the attention of C.A.B. officials instead of to Army officers who previously received them."

New Army Trans-Atlantic Service

A supplementary trans-Atlantic aerial freight line, augmenting the Air Transport Command's service, has been inaugurated by the U. S. Army Eighth Air Force Service Command in England, the War Department announces. The first flight in the new service was made Feb. 12, when a converted B-24 heavy bomber, took off from Newark Army Air Field with 6,000 pounds of high priority freight and arrived in the United Kingdom approximately three-and-a-half days later. Planes flying the service now are following the southern route via North Africa, but will fly the more direct northern route when weather permits.

dition approval upon the fact that Hughes Tool Co. is not now engaged in the manufacture of aircraft or aircraft parts for commercial use. The Department further recommends that the Civil Aeronautics Board retain jurisdiction of the matter for the purpose of reconsidering the question should Hughes Tool Co., at any time, commence manufacture of aircraft or aircraft parts for commercial use."

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Injection molded by
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WITH THE STEERING WHEEL GRIP

Toughness, that has made Lumarith plastics the first choice material for steering and control wheels, gets a shakedown test on this jungle road builder. In this application, Lumarith has to take the concentrated punishment of moisture, heat and hard usage. Injection molded over the steel blade, Lumarith must hold fast under difficult conditions.

For aircraft and automotive control wheels, grips, railings, cable pulleys and brackets, the combination of Lumarith and metal dispenses of problems of strength and structure, and, at the same time provides for hand comfort and surface permanence.

The technical service division of Celanese Celluloid Corporation has accumulated data of interest to aviation manufacturers and automotive designers. Your inquiries concerning the full range of Lumarith plastics—their properties and applications—are invited. Celanese Celluloid Corporation, The First Name in Plastics, a division of Celanese Corporation of America, 180 Madison Avenue, New York City 16.

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The LINK C-N-T synchronizes the operation of its maze of precision instruments with built-in CONSTANT VOLTAGE

The Link Crew Navigation Trainer will go down in history as one of the outstanding scientific contributions to early and complete victory in this war.

Firmly anchored to the ground where a mistake will not be costly in life and equipment, "freshmen" of the United Nations' air forces learn the fundamentals of aerial warfare. Thus thousands of lives have been saved, hundreds of bombers released for duty at the front, and thousands of airmen go forth better equipped to master the problems of actual combat.

The Link C-N-T is a teamwork trainer for pilot, navigator, radio

operator and bombardier. The heavens are accurately reproduced for celestial navigation. The pilot guides his ship over accurately duplicated terrain. The radio operator maintains communication with an air-base. The bombardier "lays his eggs" on the target. And all of these "long range" missions take place in a small, circular building only slightly larger than the familiar silo on our dairy farms.

The results of this careful, safe training have been "more bombs on the targets—more planes and crews safely home."

In order to maintain accurate coordination in all of these various

functions a specific operating voltage had to be maintained. Due to the heavy power loads, available voltages were fluctuating over such a wide range that accurate operation of the C-N-T was difficult.

The answer was built-in SOLA Constant Voltage Transformers which, regardless of power line fluctuation, duplicated the operating voltage called for on the label.

Here is another typical example of improved product design made possible by automatic, self-protecting SOLA Constant Voltage Transformers. Available in standard units from 10VA to 15KVA or custom built to design specifications.

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Constant Voltage Transformers

Transformers for: Constant Voltage • Cold Cathode Lighting • Mercury Lamps • Series Lighting • Fluorescent Lighting • X-Ray Equipment • Luminous Tube Signs
Oil Burner Ignition • Radio • Power • Controls • Signal Systems • Door Bells and Chimes • etc. SOLA ELECTRIC CO., 2525 Clybourn Ave., Chicago 14, Ill.

To Manufacturers:

Built-in voltage control guarantees the voltage called for on your label. Consult our engineers on details of design specifications.

Ask for Bulletin 16CV-74

Here's Some Speculation On Postwar Transport Personnel

By GERARD B. DOBBEN

HOW MANY PEOPLE will be employed in the air transport industry in the postwar era?

The answer to this question is susceptible of the same degree of speculation as are some of the more basic forecasts relating to aviation's prospective growth.

Postwar planning committees of both the legislative and executive branches of the government are beginning to ask the question and leaders in the aviation field and the regulatory agencies are trying to furnish some type of an answer which will be helpful to those who are responsible for postwar employment.

There are certain guideposts which can be used in making a computation of transport industry personnel which will be needed to keep the airliners in operation.

Yearly progress reports of the Civil Aeronautics Administration probably furnish the best cue. For example in 1938, the CAB report shows there were 253 planes in service and reserve with 8,955 persons employed in all phases of operations and work connected with the air transport industry. That would mean about 39.5 employees for each plane. Probably 1941, for the purposes of a forecast, would offer a better basis for study, because it is considered the last pre-war normal year.

In 1941, CAB reports show that there were 359 transport planes in use and in reserve while total personnel employed in the industry is given as 18,984. This would be approximately 53 persons employed for each transport plane.

In a statement made public June 4, 1943, Col. Edgar S. Gorrell, president, Air Transport Association, said: "Two years ago I talked in terms of 500 new aircraft for the Air Transport Industry. Today, I see an increase of at least twenty-fold after the war."

Applying Col. Gorrell's estimates against 1941 CAB records, this would mean approximately 7,180 transport planes for the commercial air lines. Using the ratio of 53 employees to each plane in use or in reserve, the total employed in the air transport industry, including pilots, co-pilots, mechanics, hostesses, hangar, station managers and office workers would be approximately 380,000.

A considerably more conservative estimate of the number of transport planes which would be required to meet the domestic airline needs after the war was given recently before a Senate committee by L. Welch Pogue, chairman of the Civil Aeronautics Board. Pogue testified that probably 2,000 transport planes would be all that would be required to meet the air line requirements.

Applying the 53 plane-employee ratio to Pogue's prediction, the air transport industry would be capable of absorbing approximately 106,000 workers in all branches of its activity.

A compromise figure between the Gorrell-Pogue estimates would call for approximately 4,000 transport planes. Fifty-three employees to the plane would make

for an industry personnel of 212,000 people in the postwar era.

Of course it must be realized that CAB computations for 1941 were based almost exclusively on the use of the Douglas DC-3 and a relatively small number of the smaller Lockheed Lodestar. Just how much the general use of the DC-4 or even larger types of aircraft might change the ratio between plane and industry personnel cannot be accurately told. One aviation engineer said he doubted whether use of the DC-4 would increase the employee ratio as much as 15, possibly not more than 10.

The CAB record divides the personnel employed in the air transport industry in 1941 as follows:

PILOTS	1,065
COPILOTS	1,119
DISPATCHERS	215
Mechanics and riggers	4,333
Other hangar and field personnel	2,185
STEWARDS	130
STEWARDESSES	894
OFFICE EMPLOYEES	7,759
ALL OTHERS	1,284
TOTAL	18,984
TOTAL PLANES	359
EMPLOYEES PER PLANE	53

UNITED AIR LINES reports 1,100,263 mail ton miles were flown in February as compared with 766,608 in February, 1943, an increase of 44%. Express ton miles flown totaled 264,851 as against 256,162 during the corresponding month of last year, a gain of 3%.

Monro Sees Air Transport In Merchandising 'Only If Cargo Rates Are Lowered'

Unless air freight rates come down, aviation cannot be expected to be applied to merchandising after the war, C. Bedell Monro, president of Pennsylvania-Central Airlines warned in a recent Washington, D. C., address. Speaking before the Sales Executives' Club in the nation's capital, Monro observed that freight rates cannot come down without a change in transport equipment and that the tactical military types of planes are not suited to conversion.

"With the development of the proper type of equipment and a balanced aviation industry, air transportation can reach its maximum potential in which progressive reduction of rates will broaden markets tremendously," he said. "To adjust this new outlook is going to take imagination, experimentation, new packaging, systems of grading, sales procedures, advertising, and methods of educating the businessmen, restaurateurs, and the housewives of the land."

Monro predicted that "the finest products of our farms and orchards will be brought to our tables within hours after they have been picked half-way across the country." He said he also foresees a reduction in inventory stocks, particularly on expensive items.

"This will be made possible despite the somewhat higher cost of air transportation because it will afford the merchant a greater use of his capital and his inventory of so-called 'dead' items will be much lower and consequent sale losses will be minimized," he asserted. "Combined, these two will make air transportation for the merchant a matter of economy."

Attend CPAL Operations Meet at Edmonton



Superintendents of various districts of Canadian Pacific Air Lines met recently at Edmonton to discuss operational problems with C. H. Dickins, CPA Vice-President and General Manager. Shown are, back row, left to right: R. B. Phillips, Supt. Alberta District and Acting Supt. Yukon District; Captain Russ Baker, Assistant Superintendent, Yukon District; O. H. Johnson, Regional Traffic Manager, Western Lines; W. J. Windrum, Superintendent, Saskatchewan District; W. T. Bunn, Assistant Superintendent, Mackenzie District. Front row, E. R. R. Field, Superintendent, British Columbia District; G. W. G. McConachie, General Manager, Western Lines; C. H. Dickins, Vice-President and General Manager, C. P. Air Lines; R. W. Ryan, General Superintendent, Western Lines; W. E. Gilbert, Superintendent, Mackenzie District.



Electronics Now Used in Making Aircraft Spars

 Fairchild's Duramold engineers have harnessed the electron to a new and urgent task—the manufacture of spars, backbones of our airplanes.

Usual plywood techniques for joining thin layers of wood could not be applied in making heavy wooden aircraft components. New methods were needed and *in a hurry*.

Fairchild engineers found the solution in electronic energy, employing radio high frequency with an apparatus similar to that used by radio stations in

sending out short wave broadcasts but designed specifically for heating the plastic adhesives efficiently.

Heat generation by radio frequency, coupled with the use of special plastic adhesives, now turns out better, stronger spars. Production time has been reduced from hours to minutes. The use of electronics has become standard procedure in this phase of Fairchild's Duramold process for building plywood structures—another instance of how Fairchild engineers apply "the touch of tomorrow in the planes of today."

BUY U. S. WAR BONDS AND STAMPS

 **Fairchild Aircraft**

*Division of Fairchild Engine & Airplane Corporation,
Hagerstown, Maryland....Burlington, North Carolina*

Women in Air Transport

(This is the thirteenth of a series of articles on women who are doing an outstanding but little publicized job for the U. S. airlines.)



Last fortnight we paid a visit to Roanoke, Va., where Pennsylvania-Central Airlines is training Navy transport pilots, teaching them airline procedure, etc. . . . It's quite a set-up and the training is thorough . . . Lots of the pilots who come to the school have had hundreds of flying hours, and aren't beginners . . . When they graduate from the school they receive some more Navy training and then go into transport work . . . All in all, the PCA school is a fine airline contribution to the war effort . . . But aside from the physical set-up of the school, we were interested in the Navy men attending it . . . Trow Sebree, who is in charge of the school for PCA, says that some of these pilots are crackerjacks—certainly the one who flew us back to Washington did a fine job . . . It seemed to us that here's a reservoir of well-trained pilot material that can be tapped by the airlines after the war . . . We questioned two of the pilots about whether they wanted to stay in air transport work after the war . . . They do—but definitely . . .

Last issue in this column we printed a picture . . . It was submitted by Eldon Frye, TWA's cartoonist, who had dreamed up the idea for an airplane which would be both landplane and flying boat—wheels on the bottom and a hull on top . . . Thus, when flying over water and a forced landing became necessary, the airplane would merely be turned upside down and landed on the hull . . . Well, it seems that everyone was confused, including our printers—they printed the picture upside down . . . So, in order for the story to make sense, please stand on your head and view the picture from that angle . . .

We're glad to see that a campaign is underway on the subject of "Courtesy Always Pays" . . . As we said several months ago, new and uninitiated personnel have made it tough for the airlines to maintain pre-war courtesy standards . . . And, several months ago, airline men were the first to admit that things in this department weren't too good . . . Now, however, the situation seems to be changing . . . The Air Transport Association has a campaign well underway, and the individual airlines are doing their bit . . . Chicago & Southern, Braniff and American are three that we think of offhand—there are plenty more . . . The ATA, in its promotional material, quotes a man who had been removed for priorities: "When they toss you out of your seat on a priority they make you take it, which is easy, but they make you like it too, which is certainly difficult. The girl who gave me my bad news must be doing the same thing all day long, and I am sure she cannot care whether the Joe Zilches get to Cleveland or not. But she made me believe that she was sincerely regretful and sympathetic at my bad luck. If you knew me you would agree that is some achievement. It's baloney, and I know it; but it's nice baloney. I like it" . . . This letter ought to be posted where all airline traffic personnel can see it . . . It's a good reminder . . .

A very interesting and attractive booklet has been published by Pennsylvania-Central Airlines to explain the company to new employees . . . In addition to a history of the company, the booklet explains the functions of the Civil Aeronautics Board and also goes into PCA's future plans . . . And have you seen Pan American Airways' English-Spanish dictionary? . . . Passengers flying to Latin America should find this little book invaluable . . .

A couple of issues ago we said it would be desirable for the Civil Aeronautics Board to hold new route hearings "out in the field" so that the applicants wouldn't have to do so much traveling—expensive traveling—to get to Washington . . . We did a little more checking the other day and it adds up to this: top CAB officials are sympathetic to such proposals, but don't expect to see anything done about it for many months . . . The Board doesn't have the money to enable its examiners to travel around, and the chances of getting the money from Congress at present are mighty slim . . . There is no appropriation in this year's budget and none in 1945's budget . . . Maybe by a year from July something can be done . . .

What a whale of a difference a few centuries make . . . Canadian Pacific Air Lines' house organ reprints the following ancient notice, dated February, 1754: "All that are desirous to pass from Edinburgh to London or any other place on their road, let them repair to the Whitehorse Cellar, in Edinburgh, at which place they may be received in a stage coach every Monday and Friday, which performs the whole journey in eight days (if God permits) and sets forth at five in the morning. Allowing each passenger 14 pounds weight, and all above, 6 pence per pound . . ." Distance from Edinburgh to London by the shortest present rail route is 401 miles . . . Underneath the notice, Canadian Pacific prints this: "Canadian Pacific Air Lines have one flight a day, except Sunday. Passengers leave Hotel Vancouver by cab for the Sea Island Airport at 7:45 a.m. Plane leaves Sea Island at 9:00 a.m., arriving at Whitehorse at 5:00 p.m., same day (if priority officers permit). Fifty-five pounds of baggage allowed on each full fare, and 50 cents per pound overweight. Dated January 31, 1944. The above distance is 1,196 flying miles . . ." Progress, we call it . . .

Eric Bramley

MARGARET LANERGAN has been in aviation more than 15 years, starting as a secretary and working herself up to her present position of assistant to the New England regional traffic manager of American Airlines.

Miss Lanergan was born in a suburb of Boston, went to school in Boston, got a job in Boston over 15 years ago with Colonial Air Transport Co., one of American's oldest predecessor companies, and has worked for American in Boston ever since. Last December Miss Lanergan, the oldest woman in the company from point of view of service, was presented with a diamond and ruby-studded pin.

The man who first hired her was Sumner Sewall, present governor of Maine and a flyer in World War I, who retained his interest in aviation and was largely instrumental in starting the first commercial service between Boston and New York. Miss Lanergan was working for a direct-mail firm in Boston when Sewall came into the office one day looking for desk space from which he could mail out some advertising folders for his airline. She took the circulars, tucked them into envelopes and even licked the flaps. It wasn't long before she was more interested in the folders than she was in the rest of the enclosures. When Sewall offered her a job as secretary, she accepted.

Those were the days when people had to be persuaded to fly, and Miss Lanergan developed a sales talk calculated to convince even the most timid person that traveling by air was at the same time the most thrilling thing in the world and as commonplace as taking the trolley from North Station to Scollay Square. Her efforts contributed to increasing the passenger loads carried by Colonial Air Transport's tri-motored Fords between Boston and New York.

Today her tact is directed toward keeping people happy who want to fly but who can't always find a seat on the flight they had wanted to take.

CAB Decisions May Extend Northeast's Routes By 411 Miles

If the Civil Aeronautics Board approves the purchase by Northeast Airlines, Inc. of Mayflower Airlines, Inc. as is recommended by its examiner, F. A. Law Jr., the air carrier will be enabled to increase its route mileage from 869 to approximately 1,080 miles. Still another 200 miles will be added to Northeast's total route mileage if the Board approves the recommendation of Assistant Chief Examiner Francis W. Brown, in the New York-Boston case, extending Northeast from Boston to New York.

Northeast entered a purchase agreement with the trustee of the Mayflower Airlines after Mayflower had filed on Oct. 13, 1942 an involuntary petition in bankruptcy. By the terms of the purchase agreement, Northeast would receive a 166½ acre tract of land, formerly used as an airport, on Nantucket Island, the certificate of public convenience and necessity and about \$300 in cash. Several months ago the carrier filed an application with the Board asking its approval of the acquisition.

Mayflower Airlines operated from Boston to Provincetown, Oak Bluffs, Nantucket and Hyannis from 1934 to September, 1939. Other companies had operated in the area prior to 1934. While records are not complete, Examiner Law mentions the passenger generating potentialities of the area based on the showing made during four summer seasons when the following numbers of passengers were carried: 1932, 4,956; 1933, 3,420; 1934, 2,639; and 1935, 1,797. He further points out that 44,000 steamship passengers embarked and disembarked at Nantucket and Martha's Vineyard during 1940 to 1942. A considerable portion of all traffic is provided by persons owning summer homes in the area formerly served by Mayflower Airlines.

Strengthen Small Line

In recommending Board approval, Examiner Law found that this purchase would be in the public interest, that it would tend to strengthen one of the smaller carriers without adding an undue financial burden and that it would provide an island area with improved means of transportation.

E. W. Wiggins Airways, Inc., a fixed-base operator, was an intervenor in the case. It held that the acquisition of Mayflower by Northeast was not in the public interest. It asked that Mayflower's certificate be cancelled.

"Mayflower holds a certificate . . . under the 'grandfather' clause of the Act. It's right of assignment is recognized by the Act. . . . In a true sense the Mayflower service is primarily terminal service rather than local or feeder. As Public Counsel cogently points out on brief, Northeast seeks only to substitute itself for Mayflower in an operation which has already been duly authorized under the Act and, it might be added, in a service closely related to its own," Law stated in rejecting the Wiggins' argument.

Louis W. Goodkind and D. Franklin Kell acted as public counsel in the case.

Leasure Defends CAB Policies, Procedures

In order that the aviation industry may avoid the pitfalls of other forms of transportation, particularly the railroads, regulation and procedure such as is represented by the issuance of certificates of public convenience and necessity for new carriers and new routes is absolutely necessary, said C. Edward Leasure, chief examiner, Civil Aeronautics Board before the Minneapolis Council of the National Aeromatic Association in Minneapolis March 27.

Leasure was answering some of the critics of CAB policies who feel that the Civil Aeronautics Act might be amended or changed in such a way as to eliminate some of the procedural requirements, particularly with reference to temporary or experimental services.

"The Act of 1938, which was acclaimed at the time of its passage as a recognition by the Congress that aviation had come of age, provided the first opportunity to expand a transportation system on an economically sound national basis," Leasure declared. He recalled that the Transportation Act of 1920 came at a time when rail expansion was virtually completed. The Motor Carrier act of 1935 also came after a vast network of motor carrier mileage had already been established.

"But turning to air transportation we find that only 38,500 miles of scheduled air routes within the continental United States were protected by the 'grandfather' rights of the Civil Aeronautics Act. With good reason therefore, the Declaration of Policy in the Act looking to the development of a sound national air transportation system with all further expansion geared to the needs of the public, was hailed with wide-spread enthusiasm by those interested in air transportation as well as by students of public utility regulation," he stated.

Leasure then reviewed the accomplishments in the development of air transportation since the Act became effective in August of 1938. He stated that Pearl Harbor had resulted in the "freezing" of all applications for new services. With most applications restored to the Board's active calendar, Leasure predicted that the CAB calendar would be reasonably current sometime in 1945.

"Considering that a large part of the proposed expansion covered by pending applications is admittedly for postwar operation, and in view of general predictions as to the length of the war, such a program would appear to represent a satisfactory goal."

"Nevertheless, but a relatively short time after its widely acclaimed enactment—a very short test period interfered with by the demands of the war—we now find a question seriously presented in some quarters as to whether the provisions of the Act and the procedures adopted by the Board thereunder will meet the best interests of the nation or whether a new and different approach to the problem of airline expansion should be made," he declared.

Leasure emphasized that not all who favor regulation do so for the sake of regulation alone. Although the primary purpose of public utility regulation is to protect the general public's interest, such regulation must necessarily recognize the

Braniff, EAL Oppose San Antonio Stop for American Airlines

The application of American Airlines, Inc. for permission to stop at San Antonio on its route from Fort Worth-Dallas to Monterey and Mexico City was opposed strenuously in oral argument before the Civil Aeronautics Board by counsel for Braniff Airways, Inc. and Eastern Air Lines, Inc.

Robert L. Griffith, counsel for American, contended that this stop would greatly improve the carrier's service to and from Mexico City. The stop, he said, would not only enable planes to carry considerably less fuel and thereby increase the passenger and cargo accommodations but it would also save passengers one hour and 51 minutes each way over the fastest present air service. He stated further that because the censorship office was at San Antonio, a stop there to take on and discharge mail would greatly improve the mail service.

E. Smythe Gambrell, counsel for Eastern, disputed Griffith's claims of improved service, said the fact that both Eastern and Braniff were operating into or through San Antonio with much less than average passenger loads proved the service was not necessary. He contended that granting this stop would give American a 20-mile shorter route to Washington than Eastern.

Roger Whiteford and Gerald P. O'Grady, counsel for Braniff, spent much of their time in contending the service was not necessary based on their own low load factors in serving San Antonio on the route to Laredo, Tex., where passengers made connection with Compania Mexicana de Aviacion at Nuevo Laredo for flights to Mexico City.

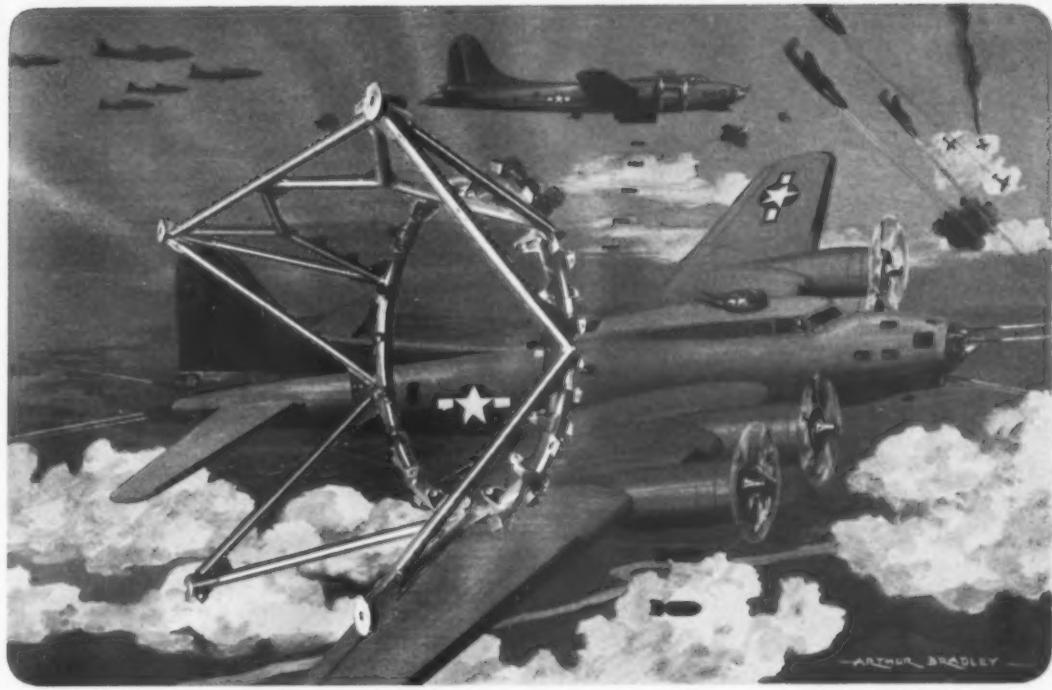
CAB Examiner Thomas L. Wren had recommended that American's application for a stop should be granted. He was supported by Public Counsel D. Franklin Kell, who told the Board that the issue in the present case was whether a temporary certificate should be given to meet war needs, that in a subsequent proceeding the Board would have an opportunity to decide whether a permanent certificate should be issued.

need for encouragement and maintenance of sound conditions in the industry under regulation.

Stating that the Act provides no shortcuts whereby new routes and new services may be authorized on an experimental basis, without first holding a public hearing, Leasure quoted the late Joseph B. Eastman, director of the Office of Defense Transportation, on the question of procedural matters as stating a conviction that there is no safe substitute in the procedure of administrative tribunals for full hearing and argument of controversial issues.

"I believe that this opportunity for full hearing, guaranteed by the Act and the Board's procedure, is one of those fundamental rights of our democratic form of government for which we are now fighting," Leasure declared.

UNITED AIR LINES reports having flown 1,100,263 mail ton miles in February as compared with 766,608 during the same month of 1943, an increase of 44%. Express ton miles flown amounted to 264,851 as against 256,162 during the corresponding month of 1943.



Six Thousand Horsepower....*in Steel Harness!*

Uncle Sam's mighty fleets of aircraft are powered with the finest motors that man has ever built.

Harnessing their thousands of horsepower into most of these planes are tubular steel engine mounts, each of which must be assembled and built to withstand the terrific strain and pressure resulting from the operations of these powerful engines.

Aircraft Mechanics, Inc. for years has served the aircraft industry in the design, engineering, and manufacturing of welded tubular assembly engine mounts as well as other welded tubular steel structural

units. In recent years, it also has produced many thousands of high tensile strength steel forgings for aircraft. Its airforge parts have an extra margin of safety . . . higher stress and fatigue resistance . . . are more uniform in structure . . . and save priceless machining hours and critical materials.

Our engineers and laboratory technicians have solved many design engineering, and manufacturing problems concerning the production of welded tubular assemblies and high tensile strength steel forgings. They will be glad to serve you, too, upon your request.

BUY U. S. WAR BONDS



KEEP AMERICA FREE



★ AIRCRAFT MECHANICS INC.
COLORADO SPRINGS, COLORADO

DESIGNERS ••• ENGINEERS ••• MANUFACTURERS

This advertisement is one of a series which is appearing in national magazines and newspapers as Consolidated Vultee's contribution toward a clearer public understanding of transportation's role in the war, and its postwar opportunities and responsibilities.

As a Liberator pilot put it: "One of their cities is missing!"



1 40 minutes ago, there were Nazi factories down there building Focke-Wulf 190's and machine guns. Now there are no factories. Not even a city. For the last of 1000 Allied bombers has just dropped its block busters and is heading for home.

Back of this 1000-bomber sweep is a story not many people know—a story quite apart from that of the heroism and sacrifice of the bomber crews. It has to do with the terrific problem of supply in waging aerial warfare. For example...



3 If your sleeper is shunted to a siding, remember this: It is probably being held up to let a fast freight streak through—tank cars of gasoline, cars loaded with spare bomber parts, engines, crates of nested bombs, tons of food, ammunition, and all the rest. Getting Bomber Command's supplies from factory to seaboard is the first lap in a 1000-bomber attack on Germany. And in this relay race to Victory, the railroads of America are doing a magnificent job!

	1,600,000 gal. gasoline
	60,000 gal. oil
	3,250,000 rounds machine gun ammunition
	4000 tons bombs
	300 tons food
	46 complete bombers lost
	126 bomber engine replacements
	75 tons other replacements: tires, armament, parachutes, radios, wing sections, instruments, oxygen tanks, bomb sights, etc.

(The figures given above are approximate)

2 Above, you get a rough idea of the cost, in material alone, to send 1000 4-engine bombers over Germany. How can Bomber Command get another 300 tons of food...1 day's supply for the 150,000 men it takes to put 1000 bombers over the target? Another 160 tank cars of aviation gasoline? Another 4000 tons of bombs? Not just for tomorrow, but for the next day, and the next. Answer: That's where Air Power's three teammates come into the picture—the train, truck, and ship...



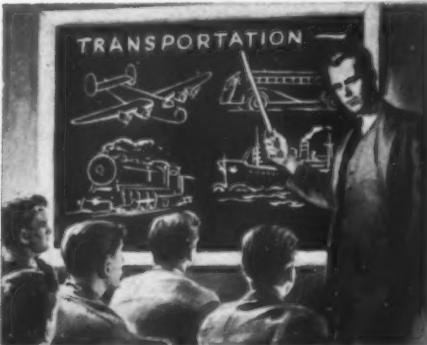
4 Slugging along at a snail's pace, protected by anti-submarine Liberators, a never-ending convoy of cargo ships and tankers becomes the life stream of Air Power. They bridge the Atlantic with supplies and replacements to keep the bombers fanning out over Germany. This link in the chain of supply must never be broken. If a cargo is sunk on the way over, Air Service Command and the Navy move heaven and earth to get an exact duplicate cargo loaded into another ship and on its way within 48 hours!

CONSOLIDATED VULTEE



5. The truck, wherever you find it, is Bomber Command's most versatile workhorse. In the U.S., along with the railroads, it delivers the goods to the convoys. At the hundreds of British air bases from which the 1000 bombers took off, again it is the truck that lugs in the gas, bombs, food, spare parts, and so on. And as a final gesture, the truck gasses-up the heavy sluggers before they take off on their mission.

IN THIS DRAMA of train, ship, truck, and plane pitching in together to help speed the defeat of the Axis, there is a lesson we *must not forget* when the war is over:



6. Out of this war will come improved, cheaper, and swifter ways of transporting goods and people—over highway and rail, on the sea, and through the air. In rebuilding the peacetime world, *all these forms of transportation must work together*, each doing the job for which it is best fitted.

And the plane will have still another responsibility. Having linked once-remote nations together into a 60-hour-wide world, it can play a vital role in *enforcing* global peace.

In short, a postwar aerial police force is America's best assurance that the peace so dearly won will not again be violated at the whim of aggressor nations.

AIRCRAFT

San Diego, Calif.
Vultee Field, Calif.
Tucson, Ariz.

Fort Worth, Texas
New Orleans, La.
Nashville, Tenn.

Member, Aircraft War Production Council

QUICK FACTS FOR AIR-MINDED READERS:

Without war paint — Covering the gleaming aluminum surface of a Liberator bomber with camouflage paint adds 180 lbs. to its weight, cuts down air speed about 8 m.p.h. **Recent AAF decision:** No more camouflage on combat planes. Speed, plus added armament, provides greater protection to combat crews.

And more in '44 Aircraft production figures for '43 show that Consolidated Vultee is now the world's largest producer of airplanes. The company delivered more than 126,000,000 pounds of aircraft last year, including spare parts. This represented 12% by *number* and 16% by *weight* of all aircraft built in the U. S.

What does it cost to fly? In 1927, air transport passengers paid 13¢ a mile. Today it costs only about 5¢ a mile to travel by air.

14 to 1—Before the war it required the equivalent of 1 year's labor for 100 Consolidated Vultee workers to build one Liberator Bomber. In 1941—a year's labor for 35 workers. In 1942—for 12 workers. Last year, and today—7 workers, or less. In other words, the same amount of direct labor that was formerly required to build one Liberator now builds 14.

No spot on earth is more than 60 hours' flying time from your local airport

From "Flying Jeeps" to Leviathans of the air—Consolidated Vultee Aircraft Corporation now builds many types of war planes, from small trainers to long-range bombers. When peace comes, the company will be in a position to provide the postwar equivalent of such planes, from small, privately owned "air fliers" to huge transoceanic cargo-and-passenger planes.



LIBERATOR ... 4-engine bomber



LIBERATOR EXPRESS ... transport



CORONADO ... patrol bomber



CATALINA ... patrol bomber



VENGEANCE ... dive bomber



VALIANT ... basic trainer



BELLANCA ... navigational trainer



SENTINEL ... "Flying Jeep"

Allentown, Pa.
Elizabeth City, N. C.
Miami, Fla.

Carriers Ask Delay In Caribbean Case

In response to numerous requests for a further extension of time to file exhibits and rebuttal exhibits, the Civil Aeronautics Board has postponed, probably until sometime in August, the hearing on applications involving new and amended routes in the Latin America-Caribbean area. The hearing had been scheduled for May 15.

The deadline for the exchange of exhibits has been extended from April 1 to June 1 and the date for exchange of rebuttal exhibits has been moved forward from April 30th to June 30th.

Ninety-two witnesses, some of whom promise to reveal interesting facts regarding new types of planes and new types of service, are scheduled to appear at the hearing. The hearing will represent a consolidation of some 40 applications presented by 23 applicants.

Most of the case summaries had been submitted as this issue went to press. A few of them reveal possibilities of some interesting disclosures—new planes, new types of ships—when the hearing is actually held.

As an example, the case summary of International Airways, Inc., wholly owned subsidiary of Atlantic Gulf and West Indies Steamship Lines, stated that L. D. Parmelee, vice president and director, will testify with respect to a new type of plane which has been designed for the proposed route. This company has filed for three routes, between New York and the terminal points San Juan, Havana and Mexico City, via Havana and Vera Cruz.

Waterman Steamship Corp., in connection with its proposed service to Puerto Rico, will submit "a picture of an improved passenger ship made from an architect's drawing" and "specifications of the proposed steamship."

Amphibious aircraft will be used wholly under the terms of an application filed by Gordons North South Air Lines, Inc. which is to be heard at this consolidated hearing. This company proposes to use rivers, lakes and natural harbors all the way from Detroit and Chicago to Buenos Aires in operations essentially concerned with the handling of property. Points to be served in addition to those mentioned above are St. Louis, Memphis, Vicksburg and New Orleans on the Mississippi river, Havana, LaGuaira, and Rio de Janiero through their respective harbors.

While no disclosures are made as to any radical departure from existing types of equipment now in use, Moore-McCormack Lines, Inc. indicates in its case summary that it will be one of the leaders in the fight to convince the Board that steamship companies should be given certificates to operate an integrated air-sea steamship service.

Counsel for Moore-McCormack states in its case summary: "The air service is a necessary complement to its sea service. It proposes to operate a through service by air between the termini indicated and also integrated with its marine service so that its passengers may make their passage entirely by air or partly by air and partly by sea."

Opposition to Examiners' Report On Feeder Investigation to be Heard

The Civil Aeronautics Board has set aside two days—April 5 and 6—to hear the arguments in opposition to the recommendations of its examiners, William J. Madden and Albert F. Beitel based on the Local-Feeder-Pickup investigation.

Approximately 20 parties, representing a complete cross section of all of the varied interests which hope to participate in the postwar development of aviation, have asked to be heard. Two surface companies—Greyhound Corp. of Chicago and Associated Truck Lines—

have each asked for one hour. Some of the railroad applicants also have asked to be heard. Many of the airlines have requested time and most of them will voice their opposition to the recommendation which would limit future expansion to cities over 25,000 population.

One of the last to file a request to be heard was the Air Line Pilots Association. The Association, it is understood, is concerned mainly with the recommendation which would permit certain passenger operations with single-engine, single-pilot planes.

ATA Booklet to Contain Data on New Plane Types

The Air Transport Association has completed the preparation of material for a booklet which will enable manufacturers and the airlines to submit uniform data on new types of planes so that performance and operating costs may be more readily compared and computed.

Need for such a standard guide has been felt for sometime due to the fact that both inquiries and reports have so often lacked common denominators whereby accurate comparisons could be made.

Completes 1,500 Hrs. for ATC



Capt. Virgil Vaughan of United Air Lines is shown after completing his 1,500th hour of overseas flying for the Air Transport Command, including 18 round trip flights to Australia. "Our hops are longer and we watch the stars instead of the beacon lights, but otherwise it's just as routine as flying my old run between Denver and Chicago," he said.

CAL's Denver Modification Center Has Busy 18 Months

Continental Air Lines' Denver modification center showed an increase of 2,200% in the modification of heavy bombers from July, 1942, to December, 1943, Stanley R. Shatto, general manager, disclosed today in a report covering the period.

During the year and a half, more than 1,600 aircraft passed through Continental's plant, the bulk of them B-17 Flying Fortresses. Two special modification projects were completed on small numbers of British planes and North American Mustangs, Shatto said.

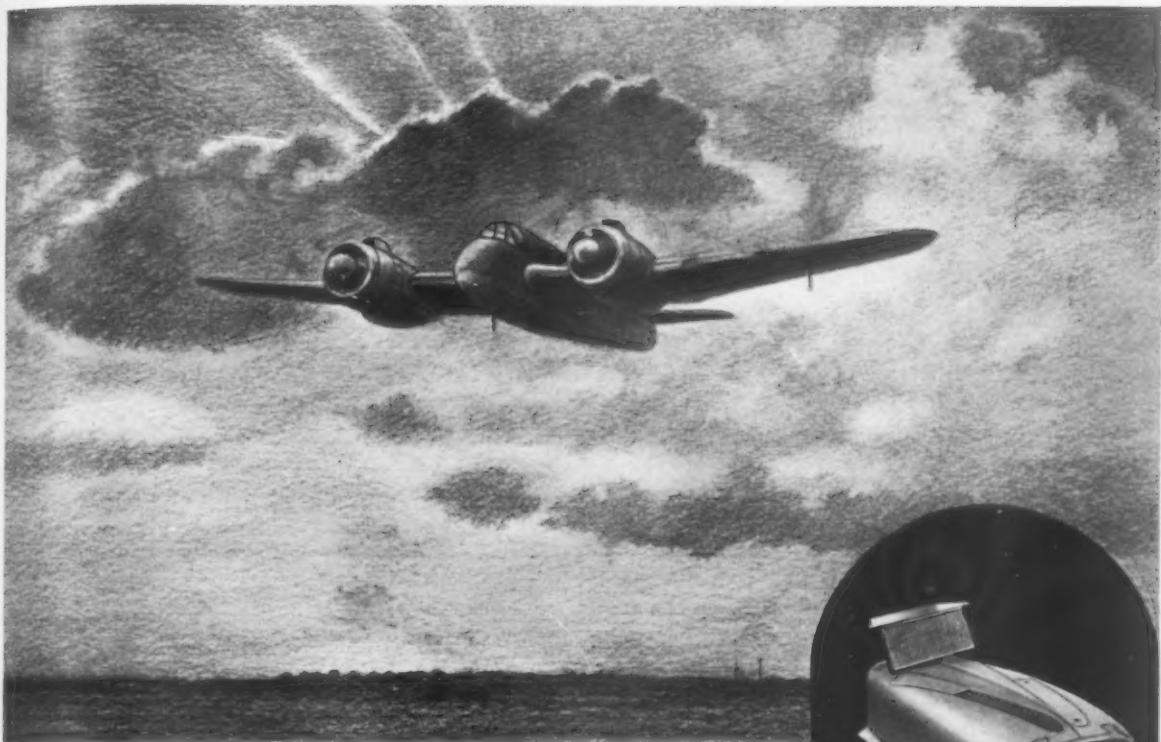
Production quotas were established in January, 1943, he said, and since that time Continental has consistently exceeded these goals. The initial quota was topped by 76%, and the February, 1943 quota by 28%.

Although the quotas have increased at a pace equal to production, the Continental plant since September, 1943, has recorded monthly excesses in its quotas ranging from 9 to 20%. With the establishment of quotas, Shatto said production jumped 183% between December, 1942, and January, 1943, and that the output of Flying Fortresses had gained steadily in succeeding months.

Dickins Favors Extending Air Routes at Home Before Attacking Global Problems

Only about one third of the population of Canada has direct access to air transport facilities and it is the provision of air routes to the other two-thirds which holds the key to Canada's air future, C. H. "Punch" Dickins, vice president and general manager of Canadian Pacific Air Lines, recently told Windsor civic organizations.

While not decrying postwar global flying, Dickins was emphatic in pointing out that there was a major job to do at home first. "Only five cities in the Province of Ontario are served by air transport. But Ontario alone has 75 cities and towns of more than 8,000 inhabitants, which is more than half the 410 communities in this group in all the Dominion. "It is clear to me," he said, "that there is plenty of room for development before this province and Canada can consider themselves properly served by air transportation."



NIGHT FIGHTER . . .

WONDERFUL organisation by brains behind the scene, initiative, skill and courage of gallant men and—this must not be overlooked—superlative performance by aircraft, all combine to establish the R.A.F. supremacy in the air night and day. There must be no "margin for error" in the performance of high powered aero-engines! They must give immediate response to the pilot's demands, even under the terrific buffeting of battle conditions.

Even in the fiercest dog fight power and speed must be maintained. When engines are "fed" with air, oil and fuel oil free from impurities, they give of their best. That is why on night fighters, battle 'planes, indeed, all types of fighters, spotters, bombers, you will find Vokes Filters in operation. The 99.9 per cent. filtration efficiency claimed for Vokes Filters is not a mere laboratory test bench figure. Vokes Filters, we are proud to say, have proved their value to the fighting forces under the most gruelling battle conditions in the air and on land and sea.

* * *

TOP—VOKES AIR FILTER FOR AERO ENGINES.

CENTRE—VOKES OIL FILTER.

BOTTOM—VOKES FLAME TRAP SILENCER SPECIALLY DESIGNED FOR NIGHT FIGHTERS.



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TRANSPORT

Circuit Trouble Detector



This apparatus cuts the time required to test an airplane's electrical system from two hours to three minutes. It was developed by E. O. Johnston, assistant foreman of line maintenance for Pennsylvania-Central Airlines, who is shown with the device. PCA reports that it not only slices the time required for testing of the plane systems but permits examination without disturbing the installation in the plane.

Recent CAB Orders Affecting Air Carriers

Order No. 2700: Granted Braniff Airways, Inc., permission for expeditious use of airport at Moline, Ill.

Order No. 2701: Granted Mid-Continent Airlines, Inc., permission for expeditious use of airport at Joplin, Mo.

Order No. 2699, Docket 445 et al: Extended National's Route 31 from Jacksonville to New York, extended Eastern from Tampa to Miami, via West Palm Beach.

Order No. 2696: Reissued United's certificates in the name of United Air Lines, Inc.

Order No. 2704, Docket 629 et al: Revised consolidation order 2662 permitting Northeast to withdraw from proceeding. Reassigned Northeast's request for certain routes to Docket 954. Cancelled Docket No. 1256.

Order No. 2702: Terminated temporary certificates issued September 9, 1941.

Order No. 2717: Granted Continental expeditious use of airports at Topeka and Kansas City.

Order No. 2718, Dockets 300 and 499: Permitted additional evidence in Pan American Airways, Inc., case involving determination of airmail pay for Latin American operations.

Order No. 2722: Permitted Eastern to inaugurate immediate non-stop service between Raleigh, N. C. and Jacksonville, Fla.

Order No. 2723: Permitted Eastern immediate inauguration of non-stop service, New Orleans to Beaumont.

Order No. 2721, Docket 966: Amended certificate of TWA to permit service on Route 61 to Morgantown, W. Va.

Order No. 2715, Docket 824: Fixed fair and reasonable rates of mail pay for National Airlines, Inc. routes 31 and 39.

Order No. 2732, Docket 838: Fixed fair and reasonable rates of mail pay for Braniff routes No. 9, 15 and 50.

Order No. 2733, Docket 892: Fixed fair and reasonable rates of mail pay for Panagra routes.

Order No. 2735: Reissued certificates of Alaska Star Airlines in the name of Alaska Airlines, Inc.

Order No. 2734, Docket 1189: Granted Woodley Airways temporary exemption to suspend service at Medfra and Takotua, Alaska.

Order No. 2736, Docket 1188: Granted Alaska Airlines, Inc. temporary exemption to suspend service at Cripple Creek Landing, Alaska.

Railroads' Passenger Revenue Increase Outgains Airlines

How the war has enabled railroads to increase their passenger revenues is seen in statistics revealing that last year 16 out of 24 railroads increased these revenues by more than 50%. Three of the increases exceeded 90%.

Of the larger airlines, United Air Lines showed the biggest passenger revenue increase—23.4%, which was less than all but one of the railroads listed.

American Airlines, largest domestic carrier, reported an increase of only 8.6%. In comparison with the railroads, American was in 20th position on a basis of passenger revenue. In 1941, the airline was in 7th place, dropping to 15th in 1942 and 20th in 1943.

A comparison of passenger revenues of leading U. S. railroads and airlines for the years 1939-1943 follows:

1943 Rank	Carrier	1939 Pass. Rev.	1940 Pass. Rev.	Percent Change	1941 Pass. Rev.	Percent Change	1942 Pass. Rev.	Percent Change	1943 Pass. Rev.	Percent Change
1	Pennsylvania R. R.	71,106,822	71,623,220	.7	89,022,891	24.3	169,122,194	90.0	245,537,445	45.2
2	New York Central R. R.	61,412,817	59,322,145	(3.4)	66,609,863	12.3	112,259,031	68.5	162,017,837	44.3
3	A. T. & Santa Fe R. R.	18,277,823	18,492,634	1.2	22,786,021	23.2	52,987,080	132.5	103,803,803	95.8
4	Southern Pacific R. R.	22,148,104	20,499,502	(7.4)	26,501,019	29.3	58,354,530	120.2	98,836,662	98.4
5	Union Pacific System	17,630,948	17,472,731	(.9)	21,554,471	23.4	45,793,903	112.5	86,472,427	98.4
6	New York, N. H. & Hartford R. R.	27,381,782	26,342,490	(3.8)	30,849,206	17.1	55,657,622	80.4	71,709,875	28.8
7	Southern R. R.	8,741,860	9,177,690	5.0	14,232,779	15.5	36,265,338	154.8	57,660,240	50.0
8	Louisville & Nashville R. R.	6,013,271	6,474,811	7.7	8,976,429	38.6	23,288,244	159.4	45,822,826	98.8
9	Atlantic Coast Line R. R.	6,505,631	7,063,738	20.9	11,817,851	15.0	25,822,233	118.5	41,800,985	61.9
10	Chicago, R. I. & Pacific R. R.	7,689,881	8,271,251	7.6	10,924,931	13.2	24,724,423	126.3	40,018,836	61.0
11	Seaboard Air Line R. R.	6,312,965	7,526,443	19.2	11,026,177	14.6	27,189,323	146.4	39,996,289	47.2
12	Baltimore & Ohio R. R.	10,856,060	10,619,307	(2.2)	13,861,068	30.5	26,795,735	93.3	39,755,440	48.6
13	Illinois Central System	9,529,182	9,943,009	4.3	12,542,496	12.6	22,531,696	79.6	38,273,089	70.3
14	Missouri Pacific R. R.	4,901,819	5,301,875	8.2	8,175,488	54.2	19,019,869	132.6	37,889,931	98.2
15	Chicago, N. W. & Western R. R.	11,493,011	11,628,304	1.2	12,916,384	11.1	20,382,903	57.8	33,443,780	61.1
16	Chicago, Burl. & Quincy R. R.	9,167,835	8,964,197	(2.2)	10,697,250	11.9	19,100,263	78.6	32,923,900	72.6
17	Chicago, Milw. & St. Paul R. R.	7,893,798	8,100,381	2.6	1,006,969	12.5	17,772,714	76.1	31,010,174	74.5
18	Long Island R. R.	17,562,293	16,327,480	(7.0)	16,532,476	12.5	21,761,287	31.6	27,648,959	21.1
19	Texas & New Orleans R. R.	3,447,863	3,608,362	4.7	5,040,798	39.7	13,880,491	27.5	25,409,804	63.1
20	AMERICAN AIRLINES, INC.	10,712,508	15,898,794	48.4	20,780,423	30.7	21,512,980	3.5	23,356,327	8.8
21	St. Louis-San Francisco R. R.	3,215,506	3,165,201	(1.6)	4,900,875	54.8	13,190,035	26.9	22,895,783	73.8
22	Chesapeake & Ohio R. R.	3,062,151	3,371,351	10.1	4,831,742	43.3	11,493,584	23.8	21,669,413	68.5
23	Texas & Pacific R. R.	2,246,643	2,314,786	3.0	3,410,078	47.3	11,263,294	33.0	20,192,261	70.3
24	Boston & Maine R. R.	7,093,916	7,072,015	(.3)	8,225,208	16.3	14,967,404	18.2	19,015,883	27.9
25	Great Northern R. R.	4,350,621	4,225,019	(2.9)	4,866,328	15.2	9,182,732	88.7	18,853,552	26.5
	United Air Lines	7,553,142	11,065,905	46.5	13,562,619	22.8	15,198,068	11.8	18,760,101	23.6
	TWA	5,143,967	7,887,663	53.3	10,415,232	32.0	10,900,372	4.7	12,902,860	18.3
	Eastern Air Lines	5,523,949	8,371,485	51.5	11,203,597	33.8	12,159,365	8.5	12,750,000*	44.1

Source of rail revenues: Railway Age
Source of air revenues: CAB Form 2780

() Denotes loss.

* Estimated.



Finish the Fight with War Bonds

"How can they come back?"

"It was a miracle the ship didn't break in two up there," said an Army Air Force Sergeant, holder of the Congressional Medal of Honor for his part in bringing home a badly crippled Boeing Flying Fortress. "I'd like to shake hands personally with the people who built it."

MANY Fortress crews echo that sentiment. They have seen planes limp in with three out of four engines dead, wings and tails riddled like saltcellars, or with shell holes as large as wash tubs. *How can they do it?*

1. Fortress wings are built with substantial, truss-type spars, covered with a double skin of tough metal. This tends

to keep gunfire damage local, rather than basically affecting wing strength.

2. Boeing engineers have always insisted on alternate methods of control. And even if battle damage prevents use of all other control methods, the automatic pilot can be used for near-normal maneuverability.

3. Virtually all mechanisms are electrically operated. Damage to one circuit will not affect others, and dispersal of these circuits reduces vulnerability.

4. The "dorsal fin," as developed by Boeing, gives the Flying Fortress inherent stability. With the vertical or horizontal tail surfaces partially destroyed

in battle, or with one or more engines shot away, a Fortress can still be flown successfully because of its tail design.

5. But one of the most important reasons why the Forts fight off enemy opposition, hit their targets and "come back" is the confidence, based on the record, which causes many a Fortress crew to stay with the ship long past normal bailout time, knowing that somehow it WILL bring them safely home.

Boeing integrity in research, design, engineering and manufacturing will again be a part of peacetime products when the war is won. When that day comes, you can be assured . . . if it's "Built by Boeing" it's bound to be good.

DESIGNERS OF THE FLYING FORTRESS • THE NEW B-29 SUPERFORTRESS • THE STRATOLINER • TRANSEOCEAN CLIPPERS

BOEING

United's Net Earnings \$4,203,276 in '42

All-time record loads of essential passengers, mail and express, together with maximum utilization of its fleet, resulted in net earnings for United Air Lines of \$4,203,276 in 1942, it was announced by W. A. Patterson, president.

This net was equivalent to \$2.80 per share of stock outstanding, as compared with \$3,134,356, or \$2.08 per share in 1942. After a \$1,000,000 reserve for post-war readjustments, United's 1943 balance was \$3,203,276, or \$2.13 per share as compared with \$2,134,356, or \$1.42 per share in 1942.

In its regularly scheduled operations during 1943, United flew 357,196,592 revenue passenger miles for an increase of 23.1 per cent over those of 1942; 11,032,548 mail ton miles, for a gain of 61.6 per cent, and 3,965,890 express ton miles, for a gain of 7.8 per cent. These increases were recorded despite a decrease in airplane miles flown which was attributed to the sale or lease of 38 planes to the government during the first half of 1942.

United's operating revenues for 1943 totaled \$27,650,545 as against \$23,593,595 for 1942. These included passenger revenue of \$18,760,101, mail revenue of \$6,316,211, express revenue of \$2,063,393 and other revenue of \$510,840. Operating expenses and taxes, exclusive of income taxes, totaled \$20,425,760 as compared with \$18,122,125 for 1942. Included were costs of flying, ground and passenger-service operations, \$10,344,405; maintenance, \$3,058,515; traffic, sales, advertising and publicity, \$2,892,194; general and administrative, \$3,042,922 and depreciation, \$1,045,943.

Other income of the company for the year and provisions for taxes on income resulted in the total net income of \$4,203,276.

The company utilized 87.8% of its total passenger-cargo payload capacity in its commercial operations. It is reported that 64% of total passenger traffic for the year was of the priority type. This rose to 80% in December and was close to 100% on certain sections of the company's system. United's fleet averaged ten hours and 47 minutes per day per plane as against nine hours, eight minutes in preceding year.

United's military contract operations included 880 one-way trans-Pacific crossings from Sept., 1942, until the end of 1943, and 2,400 other military flights in this hemisphere for the Army Air Transport Command. In such operations, United flew 11,533,612 miles with men, material and mail and carried more than

30,000,000 pounds. Other direct contract work included the modification of more than 2,700 four-engined bombers at the modification center at Cheyenne, Wyo., and the large-scale training of flight and ground personnel for the Armed Services.

Balance Sheet of United Air Lines, Inc., and consolidated subsidiaries, Dec. 31, 1943, shows assets of \$31,050,231. Current assets were \$20,838,793 including cash \$7,536,763; U. S. securities at cost \$1,000,000; Canadian Gov't bonds, at cost \$180,180; receivables from airlines, customers, agencies, etc., \$2,599,685, U. S. Post Office \$1,923,461, other U. S. departments and agencies for transportation and other charges, \$3,555,447; unbilled charges to U. S. Army \$2,657,450; inventories of spare parts, service materials and supplies \$1,385,807. Investments and special funds amounted to \$3,576,812, including cash on deposit and Government securities for replacement of flight equipment sold to Army, \$2,910,715; special deposits and advances under trust and escrow agreements \$21,000; nonoperating property and equipment, less reserve of \$121,731 for depreciation and valuation, \$367,256; investment in Mexican subsidiary \$250,000; Deferred charges were \$1,017,182 including prepayments \$114,588, advances for construction of airport facilities, being amortized over the terms of leases \$480,497; commission and expense in connection with preferred stock issued in Jan., 1944, \$295,889; other deferrals \$96,208. Operating property and equipment was \$13,032,736, less depreciation reserves of \$7,415,292, net \$5,617,444.

Current liabilities were \$9,589,097 including accounts payable \$1,342,355; amounts due other airlines on transportation sales \$1,377,207; deposits under volume travel plan \$1,423,750; accrued salaries, wages and employee bonuses \$956,427; accrued Federal taxes on income \$3,529,706; accrued taxes (other) \$731,758. Deferred credits, principally unearned transportation revenue, \$211,076. Reserve for postwar readjustments \$2,000,000. Capital stock \$15,004,510; earned surplus \$4,245,548.

In connection with the company's post-war plans, Patterson pointed out that United expects to see a five times growth of domestic air transportation, as compared with its best prewar year of 1941, within four years after the war.

"As compared with 1941, United alone expects, within four years after the war, to see a growth of from \$19,000,000 to \$100,000,000 in volume of business and from 3,700 to 18,500 in number of employees," he declared.

Hawaiian Airlines' Annual Report

A net profit of \$132,053 for 1943 is reported by Hawaiian Airlines, after deductions for territorial, Federal income, and excess profits taxes of \$308,533. Rate reductions of 15% for passengers, 50% for express, and 25% for freight, made in February, 1943, were balanced by a substantial increase in patronage, said the company's report to stockholders. Following are comparative figures presented in the report:

	1941	1942	1943
Plane Miles	665,815	698,797	916,147
Passengers	49,041	82,501	108,114
Passenger Revenue	\$638,486	\$1,065,017	\$1,241,970
Passenger Load Factor	66.27%	88.55%	93.62%
Mail Pounds	34,333	249,067	247,637
Mail Revenue	\$4,449,45	\$5,6735	\$15,258
Express Pounds	172,123	954,457	941,731
Express Revenue	\$23,612	\$137,938	\$79,905
Freight Pounds	1,291,687	4,598,456	
Freight Revenue	\$74,234	\$202,827	

AA Nets \$3,192,968

As this issue was going to press, American Airlines, Inc., issued its annual report for the year ending Dec. 31, showing a net profit of \$3,192,968 transferred to surplus, after provision of \$1,750,000 for a transition reserve. Details of American's financial report will be carried in the April 15 American Aviation.

Trans-Canada Reports
Big Traffic Increases

Trans-Canada Air Lines reports a large increase in traffic carried and in operating revenues for 1943. Passengers increased by 34%, air express volume by 126% and air mail volume by 61%, compared with 1942.

Operating revenues were \$9,379,501, an increase of \$2,042,183. Passenger receipts were \$4,213,599, increase of \$1,148,146; express revenues \$330,084, increase of \$157,064; mail revenues were \$3,515,807, increase of \$303,885.

Operating expenses totaled \$8,974,902, an increase of \$2,346,503. After payment of interest on the company's capital and other income charges, the surplus for 1943 was \$147,889.

Balance Sheet, Dec. 31, 1943, showed assets of \$8,270,311. Current assets were \$4,149,364, including cash \$1,283,437, accounts receivable \$1,051,043, traffic balances \$462,169, materials and supplies \$1,247,097. Insurance fund \$647,411. Property and equipment, less \$2,370,288 for accrued depreciation, \$3,461,393. Current liabilities were \$1,303,866 including accounts payable \$905,344, traffic balances payable \$57,899, air travel plan deposits \$155,200, salaries and wages \$127,055. Reserves were \$881,940. Capital stock \$4,600,000; surplus \$1,484,503.

AA Cargo Traffic Man
Teaches at N. Y. Academy

Walter H. Johnson, Jr., Assistant Cargo Traffic Manager of American Airlines, Inc., is the instructor of the class in Air Freight Traffic at the Academy of Advanced Traffic, 299 Broadway, New York.

Registered in the class are not only airline men and transportation workers, but business executives from the fields of banking, insurance, and engineering, interested in the application of air transport to their own fields.

Treated in the course are such subjects as freight carrier design, the air transport system, certified routes, air freight equipment, international operation, airline routes and tariffs, and priorities. Associate instructor is Woodrow J. Weinert, Air Cargo Instructor of American Export Airlines, Inc. George F. Bauer, International Traffic Analyst, Air Cargo, Inc., is listed as a guest instructor.

PENNSYLVANIA-CENTRAL AIRLINES announces that revenue plane miles in January increased 46% over January, 1943. The total number of passengers carried advanced 103%; mail, 53%; and express 97%. More than 20,000 passengers were carried during the month, against 11,000 last year.

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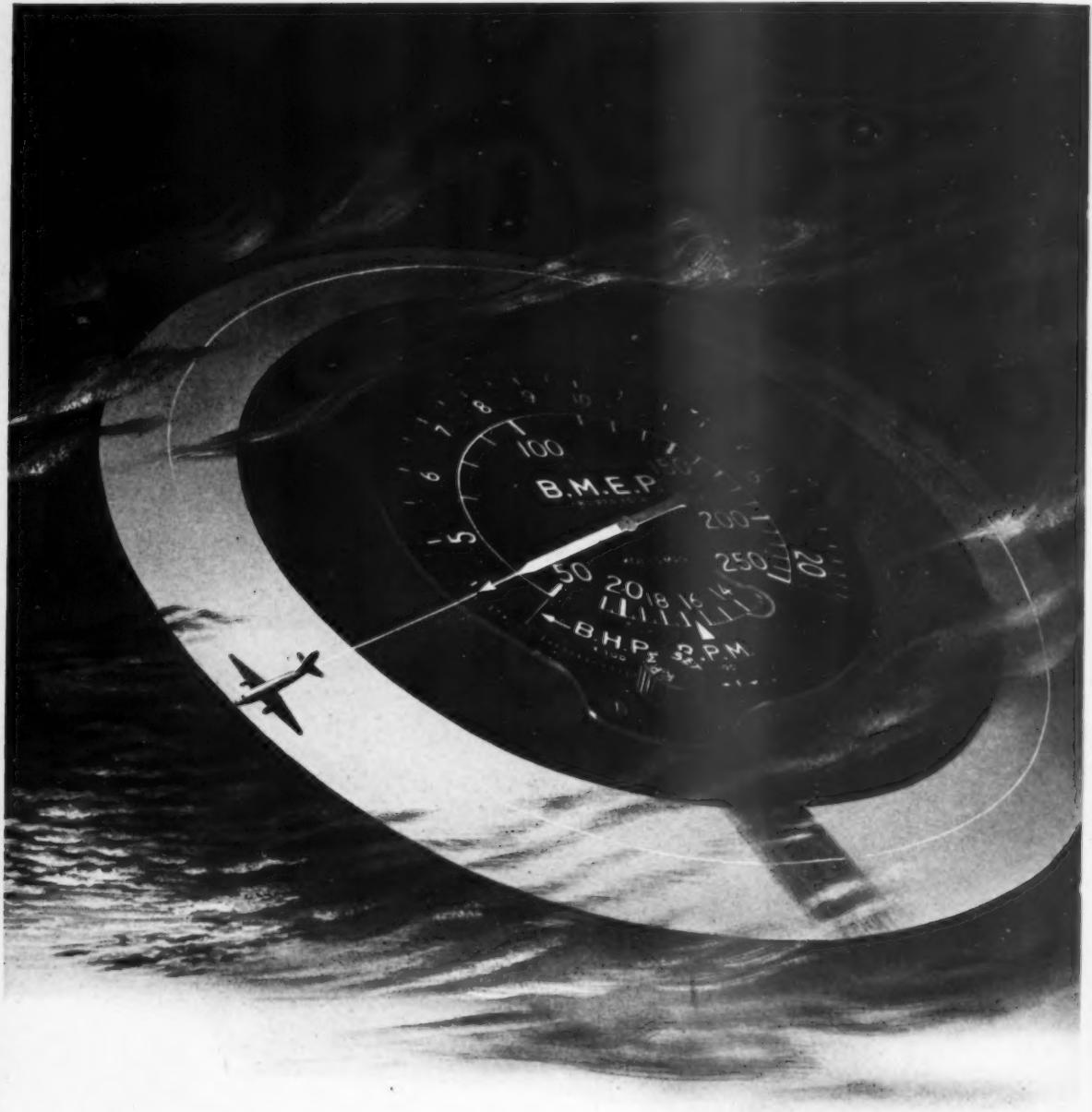
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TWA's '43 Net Income \$2,050,890

Transcontinental & Western Air, Inc., reports net income for year ended Dec. 31, 1943 of \$2,050,890 after provision of \$1,569,301 for Federal and State income taxes. This compares with net income of \$2,176,035 for 1942 after provision of \$1,493,855 for taxes.

Other comparative figures show: operating revenue in 1943 was \$19,212,938 against \$16,044,632 in previous year; operating expenses \$15,820,528 compared with \$12,654,412; profit from operations \$3,392,410 against \$3,390,220. Other income credits were \$455,740; other income charges \$227,958.

Total cost to the Government for services performed in 1943 were approximately \$15,000,000. TWA received less than 3% of this amount in fees for those services. On December 31, 1943, company had approximately 6,400 employees. Over 1,500 employees are in the Armed Services.

Recall Purchase of TACA

In October, 1943, TWA purchased an interest in TACA Airways, S. A., amounting at that time to approximately 38% of the outstanding capital stock. Issuance of additional capital stock is contemplated by TACA and after the additional stock is issued, TWA's interest will amount to approximately 22%. TWA has arranged for purchase of a 9% direct interest in Empreza de Transportes Aerovias Brasil, S. A., from TACA Airways, S. A.

Jack Frye, president, in his report to stockholders, summarizes war activities: "The most important service was the continued operation of four-engined aircraft in overseas transport service. Foreign transport operations were inaugurated in February, 1942. By December 31, 1943, planes operated by TWA had completed 1,403 Trans-Atlantic crossings. Other war services during the year included: Operation of military aircraft in transport service within the U. S.; Training of military pilots, navigators and other flight crew members; Technical training of Army ground personnel as mechanics, radio operators, etc.; Operation of a temporary Modification Center for military aircraft; Experimental tests of aircraft fuels; Performance of technical experimental radio tests; Maintenance and overhaul service for Army and Navy aircraft; Assignment of trained technical personnel to the Army for special projects."

Rights Assigned to Army

Equipment: "At the beginning of the war, TWA assigned its rights to purchase 40 Constellation airplanes to the Army. Production and use of the plane will be controlled by the Armed Forces until the end of the war. Some of the airplanes are flying and although details concerning their specifications and performance are now secret, it may be stated that they have equaled or exceeded the original specifications in almost every respect. TWA has the right to re-purchase the Constellations when they are no longer required in military service.

"Early in 1943, one DC-3 plane was returned to TWA by the Government. During the latter months of 1943, three additional DC-3 planes were returned, making a total fleet of 28 DC-3 planes in scheduled airline operation on December 31, 1943."

Consolidated Balance Sheet, December 31, 1943, shows assets of \$24,916,409. Current assets were \$9,972,133, including cash \$3,094,964; U. S. Treasury Notes \$1,125,000; accounts receivable, U. S. Gov't for passenger and mail transportation, \$1,653,211, other airlines and agents \$755,424, subscribers to air travel plan in excess of deposits \$81,125, Notes and accounts receivable, less reserve \$330,557, U. S. Gov't war contract expenditures \$1,938,579; Travel advances \$69,856; inventories, less \$246,676 for used parts and obsolescence, \$904,620. Special funds (contra) \$6,240,573; investments \$1,569,153; property, plant, equipment \$2,531,186; other property not used in operations \$816,981; equipment replacement fund \$3,172,525; intangible asset \$309,801; deferred charges \$304,054.

Current liabilities were \$5,384,348 including accounts payable (including expenditures relating to U. S. contracts) \$877,274; deposits for air travel plan, less transportation used, \$525,649; transportation sold, but not used, \$218,042; transportation tax, employee payroll deductions for taxes, etc., \$338,326; other airlines, traffic, \$69,849; sundry accounts payable \$167,746; accrued accounts, salaries and wages \$893,319, Taxes and other than income \$244,560, Federal and State income taxes \$1,566,199, insurance, rent, etc., \$456,380. Reserve funds \$6,240,573; Capital stock \$4,825,865; capital surplus \$3,918,311; earned surplus \$4,547,311.

TWA Money Saver



Ian Easterwood, Transcontinental and Western Air mechanic in Kansas City, displays the rubber hosing he originated to replace metal bushings in engine cowl flap assemblies—an idea which, TWA claims, will save thousands of dollars a year in maintenance costs. Metal bushing is at right; rubber one at left.

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TRANSPORT



Husted



Chinn

Capt. Harold Chinn, of Pan American Airways' Chinese affiliate, CNAC, is in the United States on a special assignment and expects to pilot a large transport back to the Orient. **Thomas H. Reid**, maintenance superintendent of PAA's transatlantic base at LaGuardia airport, is now a 15-year man with the airline.

Capt. Richard Husted, who was a pilot for Pennsylvania-Central Airlines before joining the AAF in March, 1942, has been awarded the Distinguished Flying Cross with Oak Leaf Cluster and the Air Medal with two Oak Leaf Clusters.

Maxine Finley, of United Air Lines' publicity staff in Los Angeles, has been named chairman for the annual Matrix Dinner, Southern California newspaper event at which the "Oscars" of journalism are awarded.

William J. Byrne has been elected treasurer of Chicago and Southern Air

Airline Personnel

Lines, and **L. Raymond Bille**, partner in the Chicago investment firm of Kebbon, McCormick and Co., has been elected to the board of directors.

Don Deegan, first TWA traffic employee in Chicago to return from Army service, has been promoted to traffic representative from reservations representative.

Capt. Carl Rach, chief pilot for Colonial Airlines, has received the War Department's Air Medal, rarely awarded to civilians, "in recognition of his skill and coolness in successfully landing a military transport aircraft which caught fire shortly after a takeoff at Buffalo airport last May."



Deegan



Rach

Mrs. Helen Warren, assistant personnel consultant for Northwest Airlines at St. Paul airport hangar, has been named personnel consultant for all women at the bomber modification project operated by the company at the airport. Northwest also announces appointment of **C. L. Stoen** as superintendent of the airline's shops at St. Paul airport; appointment of **E. B. Curry**, former regional director of the Federal Works Agency in St. Paul, as general manager of the Liberators bomber modification project operated by NWA at the airport; and promotion of four members of the company's accounting division staff as follows: **Roy Barry** to division office manager, **Ray Recht** to acting general accountant, **Searle F. Stewart** to supervisor of the invoice audit unit, and **Christine Wickhorst** to general ledger accountant.

Warren D. "Bill" Williams has been named superintendent of United Air Lines' Western flight operations; **Harold L. Knoop**, of Eastern flight operations; and **Paul Reeder**, of Pacific flight operations. **Andrew J. Pyros**, maintenance mechanic at New York, has been made a "safety ace" by the National Safety Council. **M. B. Crawford** has returned to United as equipment engineer after serving two years as field manager for Peso Products Co.

Dr. Harry L. Andrews, formerly a professor at Northwestern University, has been appointed coordinator of training for Pennsylvania-Central Airlines. **C. W. Weible**, chief pilot of PCA's Western region since 1938, has been named chief pilot of the system.

John D. MacArthur has been appointed district traffic manager for Continental Air Lines at El Paso, Tex., replacing **Seale E. Fuller**, who has entered the armed services. **C. C. West, Jr.**, who is on military leave from his position as vice president of traffic and sales of Continental, has been promoted to lieutenant colonel in the ATC.



Weible



Crawford

Braniff '43 Net Profit \$958,002

T. E. Braniff, president, Braniff Airways, Inc., reports a net profit for 1943 of \$958,002 after provisions of \$651,711 for Federal and State taxes and \$203,575 for depreciation. This is compared with adjusted net earnings for 1942 of \$512,882.

A comparison of operating statistics for 1943 and 1942 shows the following:

	1943	1942	Percent
Gross Operating Revenue	\$5,044,571.00	\$3,765,792.00	33.96+
Operating Expenses	3,531,118.00	2,965,626.00	19.07+
Operating Revenue per Revenue Mile	1.25	.88	42.04+
Operating Expenses	.87	.69	26.09+
Scheduled Revenue Miles Flown	4,045,254	4,290,093	5.71—
Revenue Passengers Carried	171,611	151,040	13.62+
Revenue Passenger Miles Flown	66,520,573	50,320,196	32.19+
Average Passengers Carried per Rev. Mile	16.40	11.73	39.81+
Average Miles Traveled per Passenger	387.62	332.20	16.68+
Passenger Load Factor	91.94	67.35	36.51+
Scheduled Daily Miles at Dec. 31	12,740	9,986	27.58+
Operating Performance	94.44	95.69	1.31—

It is pointed out to stockholders that these comparisons show that during 1943, with the operation of only seven airplanes, the revenue miles flown were within 6% of those operated during 1942, despite the fact that during the first five months of 1942, there were 16 planes in operation. Revenue per revenue mile flown was \$1.25 compared with 88c for the preceding year, an increase of 41.72% while operating expense per revenue mile was 87c contrasted with 66c, an increase of only 33%.

Balance Sheet, Dec. 31, 1943, showed assets of \$8,540,901. Current assets were \$6,855,537 including cash \$881,990; U. S. Gov't securities \$4,320,000; accounts receivable, U. S. Gov't \$1,166,797, traffic

balances receivable (net) \$110,509, commercial accounts receivable \$67,564, travel card accounts receivable \$11,468, agents accounts \$16,614; accrued interest \$20,676; inventories \$253,435. Investments and special funds amounted to \$606,839 including \$100,000 U. S. Treasury Bond deposited in connection with equipment replacement fund and \$480,000 U. S. Gov't

balances receivable (net) \$110,509, commercial accounts receivable \$67,564, travel card accounts receivable \$11,468, agents accounts \$16,614; accrued interest \$20,676; inventories \$253,435. Investments and special funds amounted to \$606,839 including \$100,000 U. S. Treasury Bond deposited in connection with equipment replacement fund and \$480,000 U. S. Gov't

securities. Fixed assets after reserves of \$977,320 for depreciation were \$829,774. Deferred charges \$248,751 including \$206,170 prepayments and advances in connection with airport facilities.

Current liabilities were \$1,027,912 including notes payable \$216,229; accounts payable \$10,569; traffic balances payable \$33,781; provision for Federal and State income taxes \$603,667; other accrued taxes \$31,634; air travel contract deposits \$86,275; transportation sold but not used \$11,872; other accruals \$33,883. Deferred credit (funds received in excess of book value of equipment sold to U. S.) \$259,422. Capital stock \$2,500,000; paid in surplus \$4,075,130; earned surplus \$678,436.



Curry



Williams

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Cabin Overhaul Seen as Major Bottleneck

Foley Recognizes that Cabin Replacements Require Considerable Time; Urges Designing 'for Use'

By E. J. FOLEY

DOMESTIC TRANSPORT CABINS are proving to be a Class A headache when it comes to maintenance and overhaul. This must be a dire disappointment to those who pictured the interior as a "permanent," pretty thing; to the more circumspect operator, it is something he's expected all along—a dividend on the "why design for use?" policy.

The almost exclusive use of fabric, dope finished, for the side wall and ceilings is the heart of the current problem. It gives that attractive bandbox neatness and is doubtless a contribution to passenger appeal. Its deficiency rests in the time involved in replacement and the deep-rooted obstructions—seats, etc.—to replacement. Statistics are denied us but we'll bet that time for cabin overhaul when replacement is involved is the bottleneck of an overhaul program.

Under pressure of such a major problem the logical approach may be evasion; maintain the interior on a day-to-day, patch and paint schedule. Don't overhaul. Sure it keeps everybody happy—passenger and operator—for an indefinite period. But comes a time when that period gets definite! Passenger and operator both pay for the latter's protraction.

Means Nothing 'On Ground'

The moral to the story: Design for use; perfection in performance doesn't mean a thing on the ground.

Our special recognition of this overhaul problem is warranted by its singular demands on time and labor.

We don't want it thought that the other sins of the designer, unfortunate features of every airplane, are forgotten in our review of this one problem. A friend warned us against pointing up one headache even if it does overshadow many others. He fears that designers learning of the interior's extravagant overhaul time will get an urge to "balance" the picture. Balance it by further complicating everything else so that the interior doesn't look so bad. Seriously, the situation is hardly that bad.

However, the friend has put a finger on a pretty good point in mentioning balance. If you seem to remember having seen that word in connection with other phases of the business treated in these columns, you're right! It is the key to most of our problems.

Design for use will be most effective only if applied with a sense of balance to all of the aircraft component parts involved. One evidence of unbalance, inadvertently supported by the air transport operators, is the quick change



Foley

nacelle installation. The frequency of engine removal has been and probably still is higher than for other components of comparable size and importance. As a result it is natural that the people paying for the periodic changes should make loud and long and eventually effective protestations favoring quick disconnect power plants.

Strange as it may seem they are getting results. One of the newer transports claims an engine change in roughly 30 minutes. Press releases don't say so but we will bet that this is with a super trained crew, the kind that auto manufacturers used to amaze the Auto Show shoppers with the simplicity of their engine. But even if a change takes two or three hours, it is good time and a long step in the right direction.

Unfortunately there is a little lack of balance in this aircraft, too. A correspondent tells us that the first attempt at removing the elevator succeeded after three or four days. Again, we want to be fair: this was the prototype airplane. Much improvement has been made in this detail in later ships, we are sure. The first try left plenty of room for improvement.

Analyzes Whole Cycle

To attain this balanced design for use implies an analysis of the whole maintenance cycle of an operator. DC-3 practice strikes us as a perfectly sound basis for our thinking. We must first find out just what steps make up the whole picture and what the order of these steps is throughout the cycle. In doing this we will automatically note the frequency with which the operations are repeated.

This frequency is an important pointer toward the course our design should follow. Minutes saved on a highly repetitive operation mean hours saved over the whole maintenance cycle. We should make sure that design of components requiring frequently repeated service makes repetition easy permanently. Poorly designed parts become useless soon from the wear of repeated service. But frequency, if used alone as a guide, will run us up a blind alley. The size of the operation timewise must be given as much consideration. Remember that the existence of these big items is what has created the need for overhaul—an "operation" which on present day aircraft requires 10 days to two weeks. The fact that it is an infrequent operation does not reduce its significance one bit. We are going to increase the size of transport aircraft. Are we going to increase required time for overhaul in direct proportion? Maybe so—but if we do it is a sorry reflection on our aircraft industry.

"Drag" is not only an aerodynamic term. Neglecting maintenance in our designs is building in drag. Our drag may not cost anything in speed—miles per hour. It does cost plenty though—in terms of miles or hours flown during the aircraft's life.

We have heard designers expound on

the need in the future to provide for rapid adjustment or repair in emergencies on airline aircraft. It's good to hear them recognize the importance of service in any form but we think we can speak for the airlines in telling the designer to forget about emergencies. Emergencies are no measure for design. Your efforts directed to the routine maintenance cycle will be more helpful more often. The emergencies will be cushioned by the operators themselves. Doubtless, emergencies will be reduced by design for use.

Getting back to our cabin problem, it appears to be today's overhaul bottleneck. If we design it the same way tomorrow, necessary time may be doubled. That's bad enough of itself but picture the implications of such a layup: two hundred flying hours lost—a half million dollar investment just standing there depreciating day after day—daily cost for maintenance adding up for three weeks and more without the aircraft able to get out and make an honest dime.

If the cabin wasn't the determining factor in time required, the airlines could probably park them in handy spots throughout the country and use them for diners for the three weeks.

Here's another joker in the deck we will be playing with tomorrow—time between services or overhaul does not go up with aircraft size. Actual experience proves that on larger aircraft the work has to be done more often. This has been true, in the past, all through the early life of the airplane simply because it is new. To have to do more work more often does not make sense—it is a situation intolerable in the future.

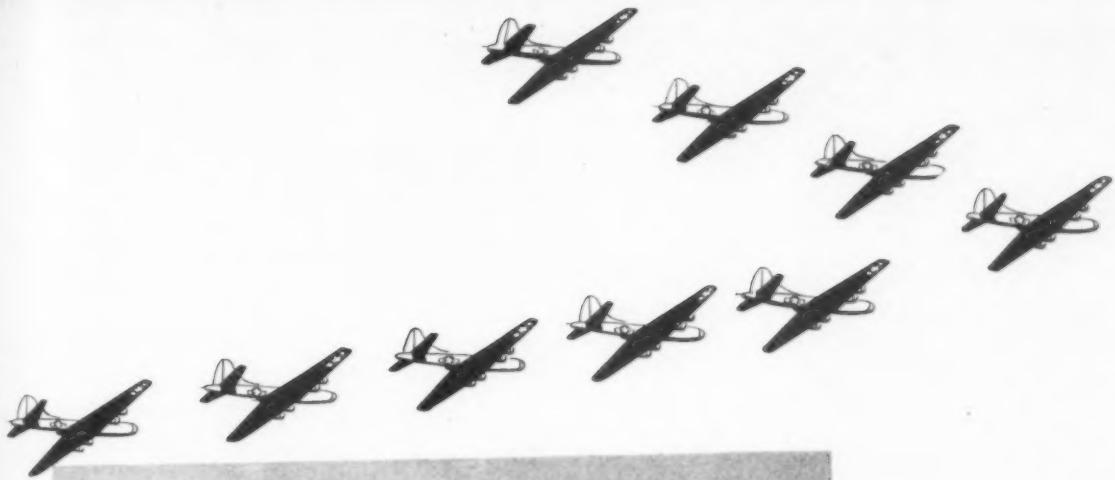
It would be refreshing to see a lot of ads depicting "dollars saved in maintenance." You can't tell us that such designs and products are less valuable than those "dollars saved in weight" jobs.

Some Suggestions

Our cabin designs should consider quickly removable seats, sectioned walls and ceilings to permit partial replacement from time to time throughout the maintenance cycle. Wall and ceiling panels should be interchangeable between aircraft, prefabricated, carried in spares stock.

Weight of course must be a consideration but plastics and even bonded wood-metal combinations should be evaluated. Matching trim strips can be used to cover seams and be no more unsightly than the fabric tapes. Ease of day to day service will be assured by a washable smooth surface. Where paint finish is used, the harder the surface the less need there will be for scratch touchup.

Here's a major problem to sink your teeth in. We'd like to know if the operators agree with us on the importance of the cabin interior from the overhaul standpoint. From the manufacturers, what do you propose as solutions for the several parts of this problem?



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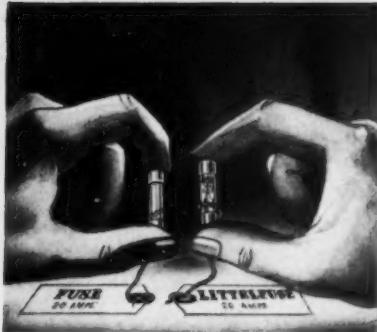


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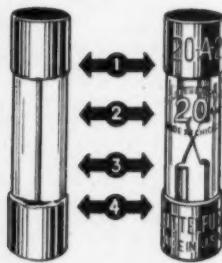
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Equipment News

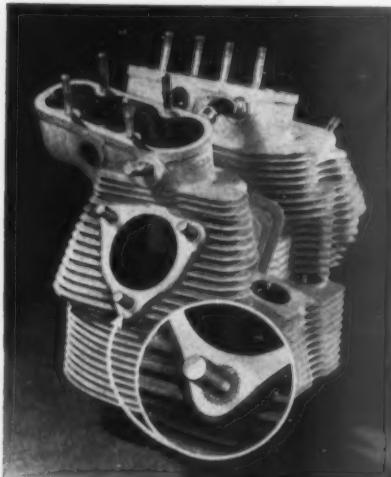
Hydraulic Fuse



Simmonds Aerocessories, Inc., 10 Rockefeller Plaza, New York City, is now producing this quantity measuring type hydraulic fuse in capacities from 10 to 40 cu. in. In the event of a ruptured or pierced hydraulic line, the fuse acts as a safety shut-off after the measured quantity has passed through the line. Thus the balance of the fluid supply is saved and the rest of the system remains intact and usable. The fuse is said to operate successfully regardless of variations in oil viscosity or rate of flow. Rates of flow as high as 20 gallons per minute do not affect its functioning; nor do back pressure, surges or large amounts of air in the system.

Locked-in Studs

This is a typical installation of Rosan Locked-in Studs in an airplane engine head. The steel locking ring has broached the parent material which is aluminum.



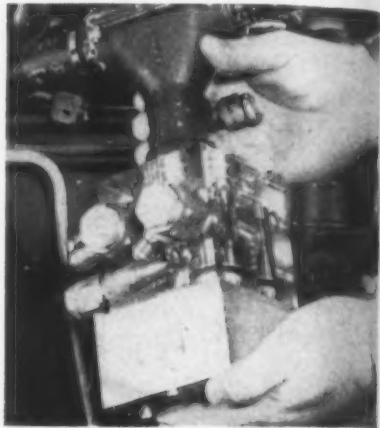
and the studs are firmly locked against vibration or torque by the serrations on their collars which have engaged the inner serrations of the locking ring.

Anti-Ice 'Boot'

A new anti-ice "boot" for propeller blades is announced by Goodyear Tire & Rubber Co. Employing synthetic rubber compounded especially to conduct electricity, the "boots" can be installed inexpensively on propellers for new airplanes and on propellers already in use, according to Goodyear. They have the added advantage, it is said, of protecting airplane propellers from sand and heavier objects up to limited sizes which might otherwise damage a propeller irreparably.

Transparent Castings

Lucite and other transparent materials are being used successfully by the training section of the Glenn L. Martin Co. Service Department in fuel selector valves, turret control valves, variable volume pumps, and fuel line sections of the PBM-3 Mariner. Glenn L. Martin, president of the company, predicts the use of



the transparent plastics to replace metal castings in many complicated working parts on flying boats of the future as an aid to inspection and servicing.

Celestial Navigation Aid

This is a new celestial navigation instrument designed especially for use in life rafts. F. H. Hagner of San Antonio, Texas, is the inventor of it and has an impressive record of accomplishments in the development of scientific navigation devices. The unit combines a sextant for use during the day, and a quick means for determining true north, sun time, latitude, great circle course and



direction. It is made entirely of Plexiglas, weighs about one pound, will float in water, and even at night is clearly visible for a distance of 25 feet, it is said.

GROUND CREW

Heroism—deadly danger—grueling combat . . . these are not the daily lot of ground crews. Their life is rather one of hard work and grave responsibility, without expectation of glory.

To these men are entrusted the care and maintenance of many accessories which are driven or actuated by Delco motors: defroster fans, machine gun mounts, fuel pumps, air pumps, windshield wipers and instruments. Delco

Products makes these motors as dependable and trouble-free as possible. They are compact and lightweight—built with extreme care and precision to meet air-borne requirements. The full measure of Delco Products' engineering and manufacturing experience as a leading producer of electric motors has been applied to this assignment. Delco Products Division, General Motors Corporation, Dayton, Ohio.



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Centralization of Planning, Control in MAP Aids British Production

By WAYNE W. PARRISH

THE MOST striking feature of British aircraft production is the centralization of planning and controls into a single agency—the Ministry of Aircraft Production.

The Ministry has no counterpart in the United States. Its powers embrace far more functions and activities than has been realized on this side of the Atlantic. Its name is just what it implies, covering everything from design specification of aircraft to delivery of completed planes to the Royal Air Force and the Fleet Air Arm, including research, construction of plants, allocation of labor, sub-contracting, procurement—in fact, everything pertaining to production. Even the repair and overhauling of planes and engines, except that which can be done expeditiously on operational bases, is handled by MAP. It is a big business.

Nearest approach to MAP in the U. S. is the Aircraft Production Board, but MAP carries with it far more authority and power than does WPB or any of the WPB units. One reason is that aircraft production has bulked as a much more important single job in Great Britain than in the U. S. Not only does it rank higher in government powers, but represents more of a major war effort than it has in this country. Only in 1944 has U. S. aircraft production risen to the relatively prominent position in the war

effort that it has rated in Britain from the start.

As far as actual volume of production is concerned, British output is, of course, considerably lower than in the United States, as was evidenced by the recent statement that 90,000 airplanes had been produced over there since 1939. The U. S. produced almost that many in 1943. But the interesting factor is not so much the numerical output as the relative position in the total war program occupied by airplanes.

There are three things that have made MAP's all-inclusive program easier to accomplish than would have been true in the U. S. The first is, unquestionably, Britain's proximity to the war itself. The need for aircraft was desperate—there could be no dilly-dallying or quibbling. A second reason is the national control over labor by the national service act. Everyone has to work or show a very strong reason to the contrary. If aircraft companies are short of workers, an allocation is made—and the workers show up, or they are in trouble. A third reason is that the RAF and the Fleet Air Arm had enough to do in war operations without the responsibility for plane production. They were satisfied, at least for the duration of the war, to let another agency handle the job.

Added to these factors is the compactness of the British Isles. It is easier to coordinate and control in a small country, especially when in the war zone.

Help Set South Pacific Record



Consairway, air transport division of Consolidated Vultee Aircraft Corp., announces that one of its Liberator transports recently flew round trip from San Francisco to Australia in 3 days, 23 hours, and 20 minutes, which, it reports, is a new record. The plane was flown by relays of eight six-man crews, stationed at South Pacific stops. Shown after bringing the plane over the last lap—Hawaii to the United States—are members of the crew. Left to right—A. Cole, R. W. Horstman, G. Irwin, Capt. L. Dorney, and J. L. Forster.

MAP came into existence in May, 1940, the product of Lord Beaverbrook. At the time of World War I the Army's air force built its own airplanes and every airplane factory in those days owed its existence to the Navy. At the close of World War I the Royal Air Force was created and the Navy's air arm was taken away and turned over to the RAF. During the 20 years' interim all service aircraft production was under the Air Ministry under which RAF functions. Late in 1938 the Navy was given permission to develop its own Fleet Air Arm but has had difficulty, naturally, in diverting much of Britain's plane production in its direction.

When the war cabinet was created, and the need for airplanes was acute, aircraft production was taken out of the Air Ministry and placed in the newly-created MAP with Lord Beaverbrook as first minister. The Beaver made things hum in short order.

By and large, MAP is given credit for doing a good job. There are the usual complaints that one finds with any government agency in any country of the world, especially a war agency. Some manufacturers refer to it as the "Ministry of Aircraft Prevention." But when all the shouting is done, one doesn't find the criticism to be too deeply-rooted. In many quarters MAP has earned a considerable respect. MAP has probably done its best in an emergency. There weren't many alternatives in the first place and MAP had to strike out at the worst possible period and under a multitude of handicaps.

The organization of MAP itself is interesting. There is a minimum of red tape and overhead—or so it seemed to an observer over a period of five weeks. For example there seems to be much less paper work in aircraft plants and in MAP than would be true in this country. But on the other hand, there is no paper to waste. They've had to get along without it. There is a minimum of personnel. On the other hand, there is an acute shortage of labor everywhere in Britain, so again there has been no choice in the matter. There couldn't be a wastage of personnel for the simple reason that there isn't any personnel to waste.

One sees comparatively few new buildings and a great many old plant facilities, but there is neither the labor nor the material with which to build huge new structures on a scale one finds in the United States. The need for quiet dispersal of production in the Battle of Britain necessitated taking over existing buildings and adapting them to aircraft production.

Shortages of everything from labor to material has brought about an economy and a type of efficiency that is refreshing when considering the tremendous cost of U. S. aircraft production because of the vast plant investments. Everywhere there is economy in Britain—in the use of plant space, in construction materials, in labor, and especially in parts and repairs.

On the other hand, Britain is limited in its potentials of production. She could never reach our own output without a tremendous allocation of labor to aircraft production to the exclusion of everything else. Labor saving machines are not found too frequently; hand methods are still being used in many places whereas the same processes have long been handled by machines in this country. On the other hand, Britain cannot create

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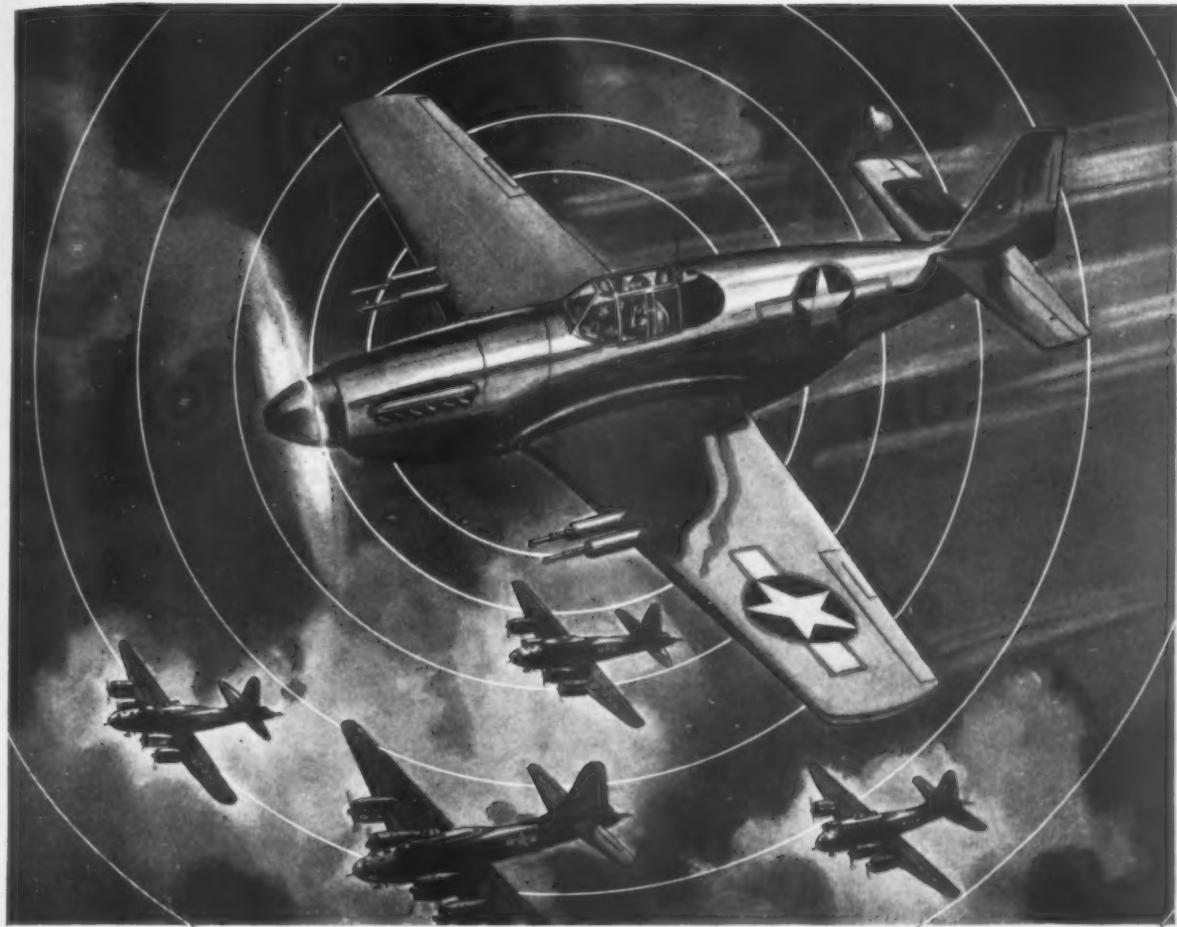
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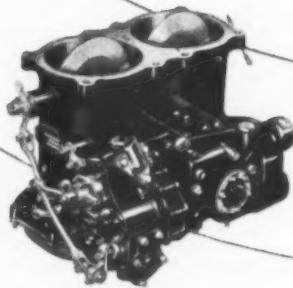
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The Stromberg Aircraft Carburetor is an important member of "The Invisible Crew" . . . precision instruments, and controls, which Bendix plants from coast to coast are speeding to our fighting crews on world battle fronts.

On the new North American P-51 Mustang fighter planes that escort American heavy bombers to the innermost war centers of Germany, Stromberg* Injection Carburetors help assure the fuel economy that makes such long-range missions possible. By compensating quickly and automatically for all changes in speed, altitude, attitude and temperature, Stromberg Carburetors also help to make the Mustang the highest climbing and fastest flying fighter in existence.

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MANUFACTURING

huge assembly lines and concentrated production at a single center. Dispersal has been necessary for war reasons. Aircraft factory targets are but a few minutes by bomber from Nazi bases. On the whole labor, not machines, is the predominant factor in British aircraft production—a factor which is quite limiting.

From all observations, quality in production has not suffered. The finished product seems to be first-class.

The national service act which orders everyone to work in Britain is both an advantage and a disadvantage as far as aircraft output is concerned. The advantage is that labor is allocated by a central national agency. When aircraft gets its allocation, MAP then allocates it throughout the industry. If a plant is short, and the product is vital, that plant then gets a preference in the labor supply. Labor is shifted about as a commodity. Once a worker is assigned to a job, he doesn't just quit until he feels like it.

The disadvantage is that there is little selection of labor on the part of the individual factory. It takes what is sent to it. Much of the labor is unskilled, as might be expected, but the British seem to adapt themselves quite easily to factory work of all kinds and especially in the operation of machines.

About the same percentage of women are working in aircraft factories as in the U. S.—about 49% in Britain. They do about the same type of work. Repetitive jobs are the most successful. Hours are longer, pay is less, than in American factories. Canteen service observed at various places ranges from fair to good. At no place was it bad. At no place was it comparable to the best in the U. S. But there again, the British have hardly been in a position to institute any mag-

nificent reforms in the midst of a bitter war.

The wide scope of MAP work is surprising to an American accustomed to a vast number of agencies, most of which overlap with at least one other. MAP has everything within its own organization. Perhaps the most single impressive feature is the manner in which planes, engines and parts are repaired and overhauled. Not an ounce of material or equipment is thrown away if it can be used. Damaged engines which we would throw away or tear down are repaired with great care. For example there are 480 repair schemes on a single type of engine. All of this repair work is an integral part of MAP. So also is all research of the type carried on in this country by the National Advisory Committee for Aeronautics and Wright Field.

There is a minimum of RAF and Navy uniforms in aircraft factories. MAP has its own civilian inspection organization and the RAF only infrequently comes into the inspection phase. Much more responsibility is placed on MAP—a civilian agency—than the Army and Navy would place on a civilian agency in this country.

In the MAP offices of London, RAF and Fleet Air Arm men are in evidence, and hold down responsible guiding positions, but most of the key jobs are filled by industrialists. As in Washington, not many of these industrialists have known anything about aviation until the war came along. It is difficult for a casual observer to judge how good they are, but the inclination is to say that they are as good and as able as the typical industrialist in this country. In wartime one doesn't quibble over such matters. The job had to be done.

One cannot help but admire the tenacity with which the British have built airplanes under many war handicaps. Management is scarcely more than an agent. It is all government from top to bottom. It hasn't been a pleasant task for any of those concerned—it's been a job of doing the most with what was at hand.

Man hours per airplane are higher than in the U. S. despite the fact that most of the British airplanes are simpler in construction. One reason for this is the dispersal system, made necessary by the proximity to Nazi bases. Another is that the British have never gone in much for the American methods of industrial production, and even if they wanted to during the war it wasn't possible to institute new methods in an emergency.

But the general governmental picture gives a worthwhile comparison to the U. S. The streamlining and centralization leaves a favorable impression. There is less duplication, less wasted effort, than in the U. S. But critics in the U. S. will answer that the U. S. has achieved much higher production and can go far higher if necessary. On the other hand, when the war ends and military airplanes are no longer needed, Britain's task of readjustment, of salvaging plants and material, will be far less.

Aero Supply Nets \$413,000

Aero Supply Mfg. Co., Inc., Corry, Pa., reports net income for 1943 totalled \$413,932. Net sales were \$19,341,048. Balance Sheet, Dec. 31, 1943, showed assets of \$8,067,815; current assets \$6,663,269; fixed assets \$1,111,176; current liabilities \$5,900,490; surplus reserves \$237,744; capital stock \$439,414; surplus \$1,794,829.

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Draft of Many Key Workers Expected by Manufacturers

AIRCRAFT WAR production plants will lose many but not all of their young workers under the new draft policies being determined in Washington. The industry is expected to be assigned a quota of draft deferred men under 26 working in plants producing Class 1 to 4 aircraft.

A telegram from Selective Service Director Hershey to all state directors on March 24 outlined the policy which has been adopted by the Armed Services, War Production Board, and War Manpower Commission to guarantee that local draft boards shall meet their quotas without unduly hampering critical production programs. At the same time, War Manpower Director McNutt established a special inter-agency committee to determine the critical plants and programs and the quotas of deferable men to be assigned each procurement agency.

Previously, WPB's Vice Chairman Wilson had drafted a letter to all war plants listing eight "critical" programs for which quotas would be considered: landing craft, synthetic rubber and 100-octane gasoline; high tenacity rayon; certain types of radar equipment; certain types of airplanes; submarines; tires and tubes; and "a secret weapon". A storm of protest arose in Washington from agencies representing mining and transportation industries and the sub-contractors for the critical programs listed.

An ensuing meeting between Hershey, Wilson, McNutt, WPB Chairman Nelson, Under Secretary of War Patterson and Under Secretary of Navy Forrestal led to agreement on the program which Hershey has since explained to State Directors. It also led to the establishment of the inter-agency committee whose membership includes WPB's Production Executive Committee, the Petroleum Administrator for War, the Solid Fuels Director, the Rubber Director, Office of Defense Transportation,

War Food Administrator, and the War Shipping Administrator.

Wilson's use of the expression "certain types of aircraft" is at present interpreted as all types but trainer planes. Informed sources indicated, however, that this might have to be modified later to include only super-critical plane models such as heavy bombers, new-type fighter planes, jet propulsion and perhaps cargo planes.

Action taken by Selective Service, as it was outlined in the Hershey telegram, includes authorization of the procurement agencies to appoint local representatives in each state to endorse requests for deferments of men under 26 in war activities other than agriculture. This represents an extension of the double certification plan employed on the West Coast but it was pointed out that replacement schedules will be retained only for men between the ages of 26 and 38.

This certification by representatives of the procurement agencies is intended as an interim procedure "until such time as permanent procedures are established for the filing of requests and lists are compiled of specific war activities and establishments in which registrants under 26 may be deferred." The certified request for deferment will then be filed with the State Director of Selective Service who may accept or deny the deferment and forward it to the local board which must take appropriate action.

When the new list of critical war activities and essential occupations has been prepared by the inter-agency committee it will constitute the final definition of men who may be "considered as exceptions to the general restriction against the occupational deferment of men under the age of 26."

Hershey directed that all men under 26 be given a pre-induction physical examination immediately whether or not they are to continue being deferred. Later, all deferred men between 26 and 38 will be reviewed and reconsidered. Men who are now classified as fit only for limited service may continue being deferred if they are contributing to war production or in support of the war effort, no matter what their age.

War Manpower Commissioner McNutt announced that by March 27 the claimant agencies for manpower would have submitted the "critical" list of activities and individual plants. The inter-agency committee will then weigh the recommendations from the special production and claimant agencies against military and civilian deferments and establish quotas of men who may be deferred in each industry and plant.

Finally, "claimant agencies will arrange to make certification with respect to the individual deferment requests at the local level, within the allocated quotas."

The severity of these actions, as they relate to war production, is clear since on Jan. 1 there were approximately 365,000 men under 26 who held industrial deferments. The President has asked that this number be pared down to not more than 40,000. A total of 243,000 of these deferments are in the 22 to 25 age group, while 122,000 are in the bracket under 22 for whom no deferment may be sought.

Republic Nets More Than

Three Million in 1943

Alfred Marchev, president of Republic Aviation Corp., reports in his annual message to stockholders, a net profit of \$3,25,954 for 1943, before renegotiations, but after net Federal and Excess Profits Taxes of \$16,770,000 and reserves of \$2,844,000. This is equal to \$3.08 per share on 982,407 shares of common stock outstanding.

Gross sales for the year are not given in the report, but sales of planes and spare parts to the AAF amounting to \$40,000,000 for the month of December were recorded.

Balance sheet, Dec. 31, 1943, shows total current assets of \$64,251,768 and total current liabilities of \$59,101,234. As of the year end, company reports it had no preferred stock, no funded debt and no bank loans outstanding.

Referring to its product, Marchev said that in the present Thunderbolt model and further improved models to be announced later, the company "may be expected to keep its present leading position in the competitive evolution necessary to meet the savage demand of war."

\$35,000-a-year Idea

A woman worker in the Good-year Aircraft Co. plant at Akron, O., was struggling with the wrinkles in the fabric she was stretching on an airplane wing frame. Suddenly, she had an inspiration. She plucked out one of several aluminum roll curlers which she was wearing in her hair and took it to the plant toolmaker. She asked him to construct one three feet long. When the giant model was completed, she clamped the fabric down with it and proved that the curler could uncurl as well as curl. The worker, Miss Alice Colletta, received a \$500 award for her idea, which resulted in saving time worth \$35,000 a year.

R. H. Deetjen Elected

To Convair's Board

Rudolph H. Deetjen, assistant to the president of the Aviation Corporation,



Deetjen

was elected a member of the board of directors of Consolidated Vultee Aircraft Corp. at the annual meeting of stockholders in San Diego, March 16. Deetjen has been a partner in the investment banking firm of Emanuel & Co. since 1931. He was a director of Vultee Aircraft, Inc., in 1941 and has served as a director of numerous other corporations, including New York Shipbuilding Corp. and Roosevelt Field, Inc.

Pacific Airmotive Opens Branch in Kansas City

Pacific Airmotive has established a branch in Kansas City with W. E. Briece, formerly vice president in charge of the supply division of Missouri Aviation, as manager.



Briece

A plant providing 30,000 square feet of floor area has been purchased and a service base established at Kansas City Municipal Airport. The Kansas City locations bring the total of plant units now operated by Pacific Airmotive, a division of Airplane Manufacturing and Supply Corp., to 17.

BELL AIRCRAFT CORP. announces that approximately 4,000 P-39 Airacobras fighters have been sent to Russia under lend-lease arrangements, constituting "about 50%" of the U. S. planes made available to the Red Army Air Force. The Soviets have been receiving these cannon-carrying fighters since the inception of lend-lease.

MANUFACTURING

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- 2 Savannah, Ga. ★ The Savannah
- 3 Birmingham, Ala. ★ The Tutwiler
- 4 Greensboro, N.C. ★ The O.Henry
- 5 New Orleans, La. ★ The St. Charles
- 6 Nashville, Tenn. ★ The Andrew Jackson
- 7 Montgomery, Ala. ★ The Jefferson Davis

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Write or wire Oliver L. Parks, President, for full information about Parks Air College and Parks graduates.

PARKS AIR COLLEGE, INC.
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Legislation Outlawing Cost-Plus-Fixed-Fee Contracts 'Unnecessary', Say Army, Navy

Senate Joint Resolution 80, which would outlaw cost-plus-fixed-fee contracts, recently was called "unnecessary" by Under Secretary of War Patterson and Under Secretary of Navy Forrestal because the services are already cutting down the use of this type contract whenever possible. They pointed out before the Senate Military Affairs Committee that the aircraft industry requires CPFF contracts in many cases "to meet the huge demands for airframes, engines, propellers and their components."

"In my opinion, if use on the fixed-fee contract were substantially restricted, it would deprive us of necessary sources of war production or would require the making of fixed price contracts on artificial and unsound bases," Patterson stated, "In the Air Forces we may reasonably anticipate that the CPFF contract will continue to be an essential method of contracting for airframes, engines, propellers and their components. Many of the factors which originally required the use of fixed-fee contracts in these fields still exist. A substantial part of the Air Forces budget is allocated to planes such as the B-29, which have never been built in quantity. Many manufacturers are being required to make products designed by other producers. As far as capital resources are concerned, the aircraft industry is still relatively small. Boeing, Bell, Lockheed and Republic, all of whose business with the Air Forces is being negotiated on a fixed-fee basis, have multiplied their output over 100 times since 1938. At present these companies taken together have a total net worth of about one per cent of their combined unfilled orders. Faced with these conditions and with the practical difficulties of converting these fixed-fee to a fixed-price contract, we see no reasonable hope of transferring most of this production to a fixed-price basis."

Despite extensive attempts to convert aircraft contracts, only three, totaling about \$500,000,000 have been placed on a fixed-price basis. The Air Forces, in addition, anticipate that the "greatly increased proportion of expenditures for new and larger planes and the increasing number of contractors now making products designed by others may make necessary a further extension of fixed-fee contracting."

Forrestal testified that the underlying principle of the Senate Resolution was in accord with present Navy practices but that undue restrictions on the use of CPFF contracts would prevent their use "where sound judgment dictates."

"To meet the unforeseen, and often instantaneous, needs of fighting this war," he stated, "There must continue to be the utmost flexibility in procurement procedures."

As of Dec. 31, 1943 the Navy had only \$5,000,000,000 of unliquidated CPFF contracts outstanding compared with \$24,900,000,000 of unliquidated fixed-price contracts," he said. Although this equals 22% of the dollar amount of all Navy contracts, it represents only .8% of the numerical total.

Forrestal explained that there are cases where, notwithstanding the utmost effort on the part of the Navy's representatives, it is impossible to shift a CPFF contract to a fixed-price status.

"In many instances contractors who are now operating on a CPFF basis are unwilling, for one reason or another, to shift to a fixed-price form," he said. "One example is the Chrysler Corporation, which holds large ordnance contracts and another is Douglas Aircraft Corp."

"On the whole we believe the Navy Dept. has been exceptionally successful in obtaining shifts of the cost-plus contracts to a fixed-price basis. For instance, during the past six months the Bureau of Aeronautics has succeeded in placing contracts for approximately \$2,500,000,000 on a fixed-price basis. Some of these contracts were converted from a CPFF form and others were negotiated originally for a fixed-price. At the present time, out of a total of \$14,175,000,000 of uncompleted outstanding contracts awarded by the Bureau of Aeronautics for aeronautical material, only \$2,900,000,000 is on a CPFF basis. At the time negotiations are in process to shift a portion of these totaling approximately \$750,000,000 to a fixed price. It is contemplated that in the near future, as time and circumstances permit, many more conversions will be made."

Forrestal emphasized that it was still especially important to continue CPFF contracts with aircraft companies on the West Coast since there are only four companies with a huge volume of contracts, many for planes which are still in the experimental stage. He added that disproportionate capitalization and the many battle-dictated design changes made this form of contract imperative.

"It is still understandable on these grounds why these aircraft producers are reluctant and in some cases unable to operate on a fixed-price basis. Nevertheless our efforts to obtain conversions have not been and will not be relaxed," he said.

Reserves for Renegotiation Refunds Not Proof of Overpayment, JPAB Says

Reserves to pay renegotiation refunds which war contractors may set up and show in their statements and annual reports may not be regarded by government officials as proof that the war contractor was overpaid, according to a ruling by the Joint Price Adjustment Board, representing the six Federal renegotiation agencies.

"The increasing practice of providing such a reserve is to be encouraged as a matter of sound accounting," Joseph M. Dodge, chairman of the Board stated. To promote this policy he instructed renegotiation officials "that such reserves are not to be considered directly or indirectly in connection with the determination of any price adjustment to be refunded to the Government under the terms of the renegotiation statute."

NORTH AMERICAN AVIATION, Inc., has been permitted by the War Department to disclose that its P-51 Mustang fighter is the world's fastest airplane. The War Department has also listed the Mustang as top performer from the standpoint of ceiling and range.



Official U. S. Army Photograph

Above All Else...

Beechcrafters are exerting every effort to hasten the day of Victory. War Production comes before all else at Beechcraft.

Beechcraft Bomber Trainers, Beechcraft Navigation Trainers, Beechcraft Transitional Trainers, Beechcrafts for Photographic Mapping, Beechcraft Twin Engine and Single Engine Personnel Transports—thousands of Beechcrafts are working for our Armed Forces, and still there is no let-up in Beechcrafters' determination to "Kill 'em with Production" or in deliveries off the production line.



Beech Aircraft

C O R P O R A T I O N

BEECHCRAFTS ARE DOING THEIR PART  WICHITA, KANSAS, U. S. A.

MANUFACTURING

Manufacturing Personnel



Siegel

Sorensen

Fitch

David T. Siegel, president of Ohmite Manufacturing Co., has been elected to the board of trustees of Illinois Institute of Technology, Chicago.

Frank G. Sorensen, president of United Aircraft Products, Inc., has become a member of the board of directors of the Pittsburgh Metallurgical Corp.

Edward H. Fitch has been named merchandise manager of the combined automotive, aviation, and Government sales divisions of the B. F. Goodrich Co.

J. McKay-Clements of Montreal has been appointed controller of White Canadian Aircraft, Ltd., succeeding **A. E. Naylor**.

Aircraft Accessories Corp. announces that **Ira Stuart Wilson**, New York financial and accounting executive, has been elected vice president in charge of finance.

Interstate Aircraft and Engineering Corp. announces the appointment of **F. L. Holser** as manager of the De Kalb, Ill., division, and the appointments of **W. E. Arrain** as production manager and **H. P. Rasp** as factory superintendent of the same division.



DARNELL

One of the great advantages of Darnell Casters is the permanency of service that goes with them. Maximum savings and efficiency is assured every user — yes, it's a Darnell guarantee that gives complete satisfaction.

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Aviation Securities Over the Counter (Courtesy Merrill Lynch, Pierce, Fenner, and Beane)

	March 11 Bid	March 11 Asked	March 12 Bid	March 12 Asked
AIRLINES				
All Amer. Aviation	43 $\frac{1}{2}$	43 $\frac{1}{2}$	41 $\frac{1}{2}$	41 $\frac{1}{2}$
Amer. Airlines Pfd.	113	...	115	114
Amer. Export Airlines	30 $\frac{1}{4}$	31 $\frac{1}{4}$	30 $\frac{1}{4}$	30 $\frac{1}{4}$
Braniif	15 $\frac{1}{4}$	15 $\frac{1}{4}$	15 $\frac{1}{4}$	16
Chicago & So. Com.	13	13 $\frac{1}{2}$	13	13 $\frac{1}{2}$
Chicago & So. Wts.	5 $\frac{1}{4}$	6 $\frac{1}{4}$	5 $\frac{1}{4}$	5 $\frac{1}{4}$
Continental Airlines	10 $\frac{1}{2}$	11	10 $\frac{1}{2}$	11 $\frac{1}{2}$
Delta Airlines	23 $\frac{1}{2}$	25	23	23
Inland Airlines	3 $\frac{1}{4}$	3 $\frac{1}{4}$	3 $\frac{1}{4}$	4
Mid Continent	6 $\frac{1}{4}$	6 $\frac{1}{4}$	6 $\frac{1}{4}$	6 $\frac{1}{4}$
National	17 $\frac{1}{2}$	18 $\frac{1}{2}$	18	18 $\frac{1}{2}$
Northeast Airlines	9 $\frac{1}{2}$	9 $\frac{1}{2}$	9	9 $\frac{1}{2}$
Penn Cent. Airlines Pfd.	31 $\frac{1}{2}$	32 $\frac{1}{2}$	31 $\frac{1}{2}$	32 $\frac{1}{2}$
MANUFACTURERS				
Aeronca	3 $\frac{1}{4}$	3 $\frac{1}{4}$	3	3 $\frac{1}{4}$
Air Associates	9	9 $\frac{1}{4}$	9	9 $\frac{1}{4}$
Aircraft & Diesel	1	1 $\frac{1}{2}$	1	1 $\frac{1}{2}$
Aircraft Accessories	2 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$
Airplane & Marine	1 $\frac{1}{2}$	2 $\frac{1}{4}$	1 $\frac{1}{2}$	2 $\frac{1}{4}$
Airplane Mfg. & Supply	70 $\frac{1}{2}$	80 $\frac{1}{2}$	75 $\frac{1}{2}$	80 $\frac{1}{2}$
Central Airports	5 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$
Columbia Aircraft Prod.	3 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$
Contl. Aviation	2 $\frac{1}{2}$	3 $\frac{1}{4}$	2 $\frac{1}{2}$	3 $\frac{1}{4}$
Delaware Aircraft Pfd.	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$
Gen. Aviation Equip.	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$
Globe Aircraft	50 $\frac{1}{2}$	50 $\frac{1}{2}$	50 $\frac{1}{2}$	50 $\frac{1}{2}$
Harlaw Aircraft	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$
Harvill Corp. Com.	2	2 $\frac{1}{2}$	2	2 $\frac{1}{2}$
Harvill Corp. Pfd.	75 $\frac{1}{2}$	90 $\frac{1}{2}$	75 $\frac{1}{2}$	90 $\frac{1}{2}$
Interstate Aircraft & Eng.	6 $\frac{1}{2}$	7 $\frac{1}{2}$	7	7 $\frac{1}{2}$
Jacobs Aircraft	3 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$
Kellett Aircraft	7 $\frac{1}{2}$	21 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$
Kinner Motor	55 $\frac{1}{2}$	75 $\frac{1}{2}$	70 $\frac{1}{2}$	70 $\frac{1}{2}$
Liberty Aircraft	11 $\frac{1}{2}$	12 $\frac{1}{2}$	11 $\frac{1}{2}$	12
Luscombe	3 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$
Menasco Mfg.	90 $\frac{1}{2}$	110	90 $\frac{1}{2}$	110
Northrop Aircraft	5	5 $\frac{1}{4}$	4 $\frac{1}{4}$	5 $\frac{1}{4}$
Piper Aircraft Com.	5 $\frac{1}{2}$	6 $\frac{1}{4}$	7	7 $\frac{1}{2}$
Piper Aircraft Pfd.	14 $\frac{1}{2}$	15 $\frac{1}{2}$	17 $\frac{1}{2}$	18
Pitts. Aviation Ind.	4 $\frac{1}{2}$	5 $\frac{1}{2}$	4 $\frac{1}{2}$	5 $\frac{1}{2}$
Rohr Aircraft	5 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$
Std. Aircraft Prod.	2 $\frac{1}{2}$	3 $\frac{1}{2}$	2 $\frac{1}{2}$	3 $\frac{1}{2}$
Taylorcraft Com.	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$
Taylorcraft Pfd.	4 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$	6
Timms	35 $\frac{1}{2}$	45 $\frac{1}{2}$	35 $\frac{1}{2}$	45 $\frac{1}{2}$
Utd. Aircraft Prod. Pfd.	14 $\frac{1}{2}$	15 $\frac{1}{2}$	15	16

Waco Aircraft Co. reports that **Hugh R. Perry** has been named general manager and vice president.

The Plastics Division of Monsanto Chemical Co. announces the promotion of **J. H. Clark** to the position of sales director; **F. A. Abbiati** to general manager; **J. R. Turnbull** to assistant general manager of sales in charge of sheet materials; and **E. J. Ecklund** to assistant sales manager of the sheet department.

The Aviation Corp. has appointed **Ray J. Cowden** sales manager of its Lycoming Division. He has been contract and service engineer of the American Propeller Corp. AVCO subsidiary.

American Aviation Corp. announces this revised list of officers, directors, and department heads: **R. N. Webster**, president and general manager; **H. R. Carlson**, vice president and assistant general manager; **Wells L. Riley**, vice president; **Frank Lee Wesson**, treasurer; **Warren C. DuBois**, secretary; **Walter H. Kilbourne**, **John B. Farwell**, **Frank H. Neher**, and **Gilbert W. Douglas**, directors; **L. G. Herrmann**, director of personnel; **E. C. Arnold**, director of procurement; **S. D. Smith**, director of public relations.

PESCO Products Co. announces these personnel changes: **Ed M. Whalley** is appointed works manager; **Louis Matthews**, general superintendent; **Jay M. Roth**, director of engineering for mechanical developments; **John A. Lask**, chief engineer of the pump department; **Ed. S. Moreland**, assistant sales manager.

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THE LITTLE IMP is made of *petroleum coke.*

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For every pound of vitally needed aluminum produced, $\frac{3}{4}$ pound of petroleum coke is needed. Formerly, it had to be chipped out of the coking ovens "by hand"—a slow job which tied up the refining unit and took manpower.

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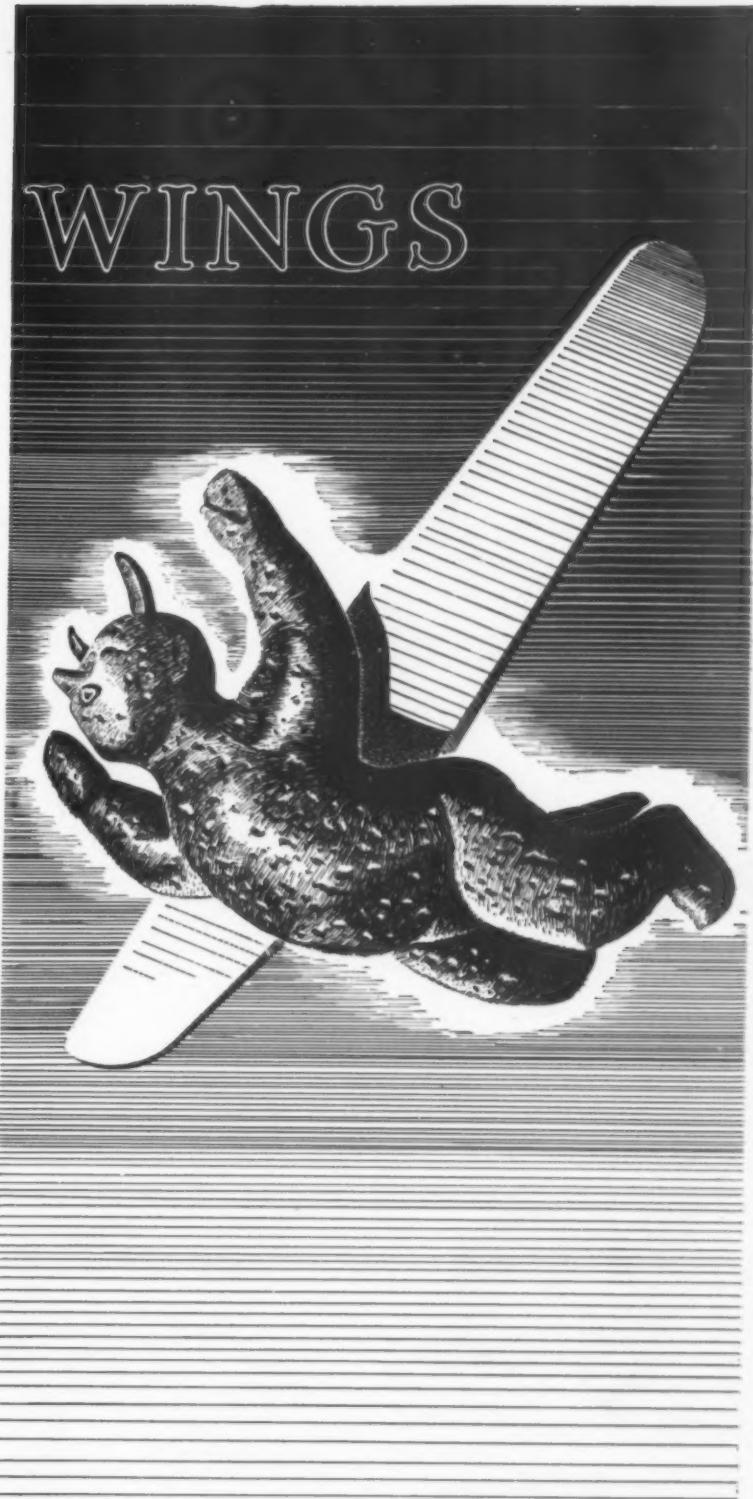
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Shell was first, too, to supply American military aviation with a super fuel—100-octane gasoline—giving our planes new speed, flying range, and tactical advantage. Later Shell discoveries vastly increased both power and production of aviation gasoline.

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Bell Reports '43 Net of \$2,462,414

Bell Aircraft Corp. reports net profit for year ending Dec. 31, 1943 was \$2,462,414, equal to \$7.77 a share on 394,240 shares of capital stock. This compares with \$1,711,583 in 1942, equivalent to \$8.16 each on 356,750 shares.

Sales and billings under cost-plus-fixed fee contracts amounted to \$232,134,628. Company produced 22,650,000 pounds of airframes, compared with 8,839,500 pounds in 1942 and produced two and one half times as many Airacobras. Working capital was increased to \$5,657,000 at the end of 1943, equal to \$14.33 a share on common stock.

Balance Sheet, Dec. 31, 1943, showed assets of \$98,070,364. Current assets were \$90,823,401 including cash in banks and on hand \$7,663,665; cash in reserve acct. \$1,556,067; U. S. Treasury Notes \$7,237,303; accounts receivable \$12,989,044; expenditures to be reimbursed under cost-plus-fixed-fee \$55,897,092; travel advances, principally for reimbursable expenses of foreign service representatives

\$250,865; inventories \$5,229,365. Postwar refund of Excess Profits Tax \$2,086,000; fixed assets \$2,605,276; deferred charges \$2,533,288.

Current liabilities were \$85,165,973 including notes payable \$38,400,000; advances on U. S. Gov't. contract \$15,000,000; accounts payable \$12,628,508; accrued wages, taxes, etc., \$8,105,257; provision for 1942 renegotiation refund \$1,780,000; provision for estimated Federal taxes \$3,252,208. Reserve for contingencies \$3,000,000. Capital stock \$394,240; capital surplus \$4,000,772; earned surplus \$5,509,379.

RYAN SCHOOL OF AERONAUTICS balance sheet, Oct. 31, 1943 shows assets of \$921,273. Current assets were \$789,937; fixed assets less \$51,688 reserve for depreciation, \$45,956. Current liabilities were \$523,617; reserve for post-war contingencies and adjustments \$50,000. Capital stock \$4,634; surplus \$287,291. Net profit was \$52,501; provision for Federal income tax \$296,654.

Leading Aviation Stocks

New York Stock Exchange

	Week Ended March 11			Week-Ended March 18				
	Sales	High	Low	Net Change	Sales	High	Low	Net Change
American Airlines	2,400	66	64	+ 1%	1,400	66 1/2	65	- 1
Aviation Corp.	14,100	4 1/2	3 1/2	.....	15,100	4 1/2	3 1/2	.....
Beech Aircraft	3,900	9 1/2	9	+ 1/4	7,300	9 1/2	8 1/2	- 1/2
Bell Aircraft	3,600	13 1/2	12 1/2	.....	5,400	15 1/2	12 1/2	- 3/4
Bendix Aviation	12,400	37 1/2	35 1/2	+ 2 1/2	5,100	37 1/2	37	+ 1/4
Boeing Airplane	3,900	15 1/4	14 1/4	- 1/4	6,300	15 1/4	14 1/4	- 1/4
Braniff Airways	10,100	16 1/4	15 1/2	+ 1/8	18,700	16 1/2	15 1/2	.....
Consolidated Vultee	7,500	14 1/4	13 1/4	.....	7,900	14 1/4	13 1/2	+ 1/4
Consolidated Vultee pfd.	700	21	20 1/4	.....	1,300	21 1/4	20 1/4	- 1/4
Curtiss-Wright	20,100	5 7/8	5 1/4	- 1/8	19,600	5 7/8	5 1/4	+ 1/8
Curtiss-Wright A	6,200	17	16 1/2	.....	8,900	17 1/2	16 1/2	+ 1/2
Douglas Aircraft	2,500	55 1/4	53 1/2	- 1 1/4	3,200	54 1/4	53 1/2	.....
Eastern Air Lines	1,900	38 3/4	38	.....	2,300	38	37 1/2	+ 1/2
Ex-Cell-O	4,500	26 3/4	25 1/2	+ 1 1/4	5,000	26 7/8	26 1/2	- 1/4
Grumman Aircraft Eng.	1,100	12 1/4	12	.....	6,500	13	12 1/4	+ 1/4
Lockheed Aircraft	6,700	17 1/2	17	+ 1/4	11,900	18	17 1/2	+ 1/2
Martin, Glenn L. Co.	5,600	18 1/2	18 1/2	+ 1/8	7,700	19	18 1/2	+ 1/2
National Aviation	800	11 1/2	11 1/2	.....	1,300	11 1/2	11 1/2	+ 1/2
North American Aviation	6,300	9	8 3/4	+ 1/8	11,300	9 1/2	8 3/4	+ 1/4
Northwest Airlines	2,600	22 1/4	21 1/2	+ 1 1/8	6,300	24 1/2	22 1/2	+ 1/2
Pan American Airways	12,000	33 1/2	32 1/4	- 1/4	14,200	33 1/2	32 1/2	.....
Penn-Central Airlines	5,000	16	15 1/2	+ 1/4	2,500	16 1/2	15 1/2	.....
Sperry Corp.	6,600	26 1/4	25 1/2	+ 3/4	10,800	26 1/2	25	.....
Thompson Products	1,600	38	35 1/2	+ 2 1/2	1,400	39 1/2	37 1/2	+ 1/2
Trans and Western Air	2,500	19 1/4	18 1/2	+ 1/2	4,400	21 1/4	19 1/2	+ 1/2
United Air Lines	6,700	27	26	+ 1/4	19,100	27 1/2	25 1/2	+ 1/2
United Air Lines pfd.	700	111	110 1/4	+ 1 1/4	600	112	110 1/4	+ 1/4
United Aircraft	9,100	29 3/4	28 1/2	+ 3/4	11,200	30 1/2	29 1/2	- 1/2
United Aircraft pfd.	1,000	104	102 1/2	+ 1 1/8	800	105	104	+ 1/2

New York Curb Exchange

	Week Ended March 11			Week-Ended March 18				
	Sales	High	Low	Net Change	Sales	High	Low	Net Change
Aero Supply B	800	3 3/4	3 3/4	+ 1/8	500	3 1/2	3 1/2	+ 1/8
Air Associates	800	9	8	+ 1/8	2,200	9 1/2	9	+ 1/8
Aircraft Accessories	800	2 1/2	2 1/2	+ 1/4	900	2 1/2	2 1/2	.....
Aro Equipment	600	8 1/2	8 1/2	- 1/4	1,700	8 1/2	8 1/2	.....
Bellanca Aircraft	500	3 1/4	3 1/4	.....	3,300	3 1/2	3 1/4	+ 1/8
Breeze Corp.	2,500	12	11 1/4	+ 7/8	4,600	12 1/2	11 1/2	+ 1/2
Brewster Aero	1,600	3 1/2	3 1/4	.....	10,600	3 1/2	3	- 1/2
Cessna Aircraft	2,100	6 1/2	6 1/2	.....	2,100	6 1/2	6 1/2	.....
Colonial Airlines	800	7 1/2	7 1/2	+ 1/2	4,900	8 1/2	7 1/2	+ 1/2
Fairchild Eng & Air	2,400	2 1/2	2	.....	6,300	2 1/2	2	- 1/2
Irving Air Chute	700	8 1/2	8 1/2	+ 1/4	1,000	8 1/2	8 1/2	.....
Northeast Airlines	7,700	9 1/2	8 3/4	- 1/4	11,700	10	9 1/2	+ 1/2
Republic Aviation	8,800	4 3/4	3 3/4	+ 1/2	31,000	4 5/8	4	+ 1/2
Ryan Aero	1,800	4	3 3/4	+ 1/8	100	3 3/4	3 3/4	.....
Solar Aircraft	1,300	3 1/4	3	+ 1/8	1,900	3 3/4	3 1/4	+ 1/2
United Aircraft Prod.	1,400	8 1/2	8 1/4	1,100	8 1/2	8 1/4	+ 1/2
Western Air Lines	800	9 1/4	9	+ 1/4	2,300	9 1/2	9	- 1/2



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Cost-Plus-Fixed-Fee Contracts Supported by Aero Chamber

THE AERONAUTICAL Chamber of Commerce last week declared its belief that fixed-fee contracting is "the only practical means of obtaining the maximum production from the aircraft industry within the limits required by the war emergency." Asking that Congress refrain from outlawing cost-plus-fixed-fee contracts, the Chamber stated that results so far achieved have been "eminently satisfactory."

Not the form of contract but the administration is important, it stated, and the same evils alleged to exist under CPFF contracts may also be alleged to exist under fixed-price contracts. It is our firm opinion, based on experience, that the enactment of S. J. Res. 80 will not materially contribute to the solution of the manpower problem or provide substantial incentive for increasing efficiency and reducing costs." The Chamber asked to have any such resolution which might be passed modified to permit the continuation of CPFF contracts with aircraft companies.

In a statement prepared for the Senate Military Affairs Committee, ACCA outlined the basic premises on which its position rests. Primary among them was the adaptability of the CPFF method to quick changes in requirements and specifications for aircraft, permitting the contractor to adopt all changes immediately without the loss of time entailed in prolonged negotiations, with both the Government and subcontractors, required by the fixed-price contract method.

The unusually rapid technological advances of aeronautical science and revisions in the tactical employment of aircraft require frequent change of specifications. The provisions of CPFF contracts permit more expeditious incorporation of such changes." To explain the "inherent flexibility of operation which is permitted under a CPFF type of contract", the Chamber cited the history of one of our heavy bombers, which was developed in 1935. After continuous improvements, its design was frozen at the outbreak of war. But combat experience required the incorporation of more than 90 changes in this plane alone; many of these changes were of a major nature. Since the manufacturer held a CPFF contract he could make each change as soon as authorized by the Army Air Forces. "The total money value of the changes involved was several times the very limited capital of the manufacturer. Obviously," the statement points out, "had this manufacturer been on a fixed-price basis, he could not have made these changes until contract negotiations had been concluded."

Another reason cited was the difficulty of developing new models under fixed-price contracts since it is impossible to estimate costs of designs and prototypes with any degree of accuracy. In one case, "contracts totaling in excess of one billion dollars were awarded for a new large type of airplane prior to the time the prototype airplane had ever been flown. Furthermore, this airplane is being built by several contractors besides the designer. Obviously, no manufacturer could even consider production on a fixed-price basis under such circumstances."

Rising costs and instability of prices make aircraft contractors with limited capital unwilling to risk their solvency on fixed-price contracts. A further source of incalculable costs is created by the uncertainty as to the availability of materials; bottlenecks in production of components and transportation delays force plants to remain idle and inflate costs of performing a contract. ACCA pointed out that a CPFF contractor does not benefit from these tie-ups since delays prolong his contract and unallowable overhead costs reduce his fixed-fee.

Manpower shortages and turnover cause additional increases in costs. The Chamber points out that the huge in-plant training programs would not have been possible except under CPFF contracts. In order to maintain a sufficient number of employees, the aircraft manufacturer has suffered "such a high percentage of labor turn-over that his costs have been substantially increased. The contractor should not be forced to risk this uncertainty by being compelled to fix a price upon all of his production because this element of the increased prices is at all times beyond his control."

The financial over-extension typical of the industry would force the contractor on a fixed-price basis "to give his first attention to the preservation of his company rather than to the production of airplanes and the rapid adoption of modifications." It was also pointed out that

the uncertainty as to termination methods to be employed in connection with fixed-price contracts up to this time have caused many contractors to avoid them.

Asserting its opinion that there is no essential difference in costs under the two types of contract, the Chamber states, "It is believed that an examination of the indices released by the Army Air Forces' Statistical Control Office will indicate that CPFF contractors utilize their facilities and manpower as efficiently as do fixed-price contractors. An analysis of the principles of CPFF contracting brings forth a fallacy inherent in such statements and indicates that CPFF contracts do very definitely offer an incentive for efficient production." The statement includes careful illustration of the way in which the fee allowed on each unit of production may be earned only by efficient and economical operation and is reduced as soon as labor and overhead costs are raised.

This incentive to efficient operation places the CPFF contractor on virtually the same basis as the fixed-price contractor, who, since the institution of the renegotiation, has, as his only method of making more profit, the increase of his output.

In conclusion the Chamber's statement points out that "airframe manufacturers face a postwar period which in all probability will be highly competitive, and it is not believed that they are shortsighted enough to permit their organizations to operate on anything but the most efficient basis possible in order that their organizations may be in the best possible position to meet postwar conditions."



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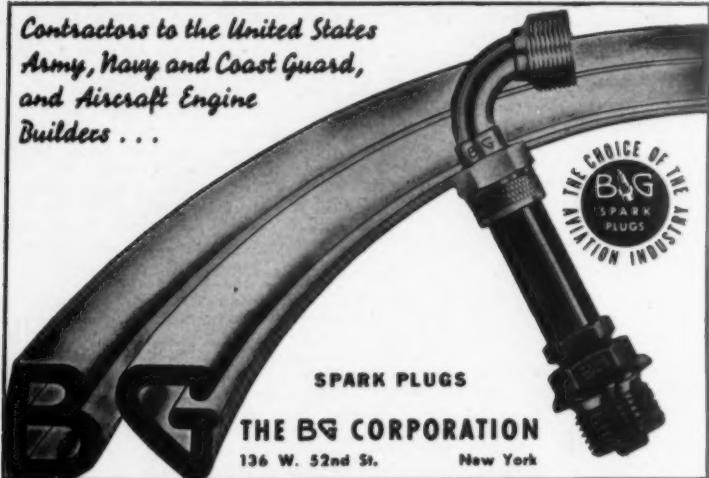
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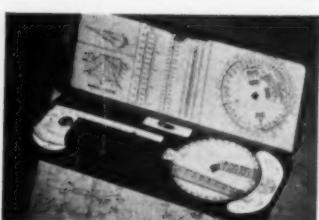
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Kaiser to Leave Brewster

Henry J. Kaiser, finding it impossible to carry out his administrative ideas satisfactorily while serving in the dual capacity as manager appointed by the Navy Dept. and as representative of the interests of stockholders, has announced that neither he nor his associates will accept re-election as officers or directors of the Brewster Aeronautical Corp. The next annual meeting of stockholders is called for May 17.

Stating that the fighter program is well in hand and that production is now exceeding schedules, Kaiser advised stockholders in a letter that important problems affecting both the financial condition of the company and its future remain to be solved.

"Since the present management assumed office for the purpose of meeting the production emergency and this task has now been accomplished, it is now appropriate for this management to retire and be replaced by a management selected by the stockholders.

"Accordingly, the present members of the board of directors, with two possible exceptions, do not intend to be candidates for reelection at the next annual meeting of stockholders and the management does not intend to solicit proxies for such a meeting."

One of the important problems facing the company is the liquidation of a Regulation V loan, which is 100% guaranteed by the Navy Dept., under which the company may borrow up to \$55,000,000. It is understood that as of March 1, 1944, the borrowings under this loan stood at \$35,200,000. Among other serious problems, "upon the solution of which both the financial condition of the company and its future will depend" is the inability to determine the financial results of 1943.

"This is because of the presently unknown effect of the termination of the British and Navy bomber contracts, of the take-over by the War Dept. of the company's Newark plant, and of the accounts which will be received or required to be paid in respect to other unsettled claims," the letter continued.

"The claims which are presently unsettled involve such large sums of money and the range in possible dispositions is so wide, that until the major unsettled claims have been disposed of, it will not be possible for the company to issue financial statements."

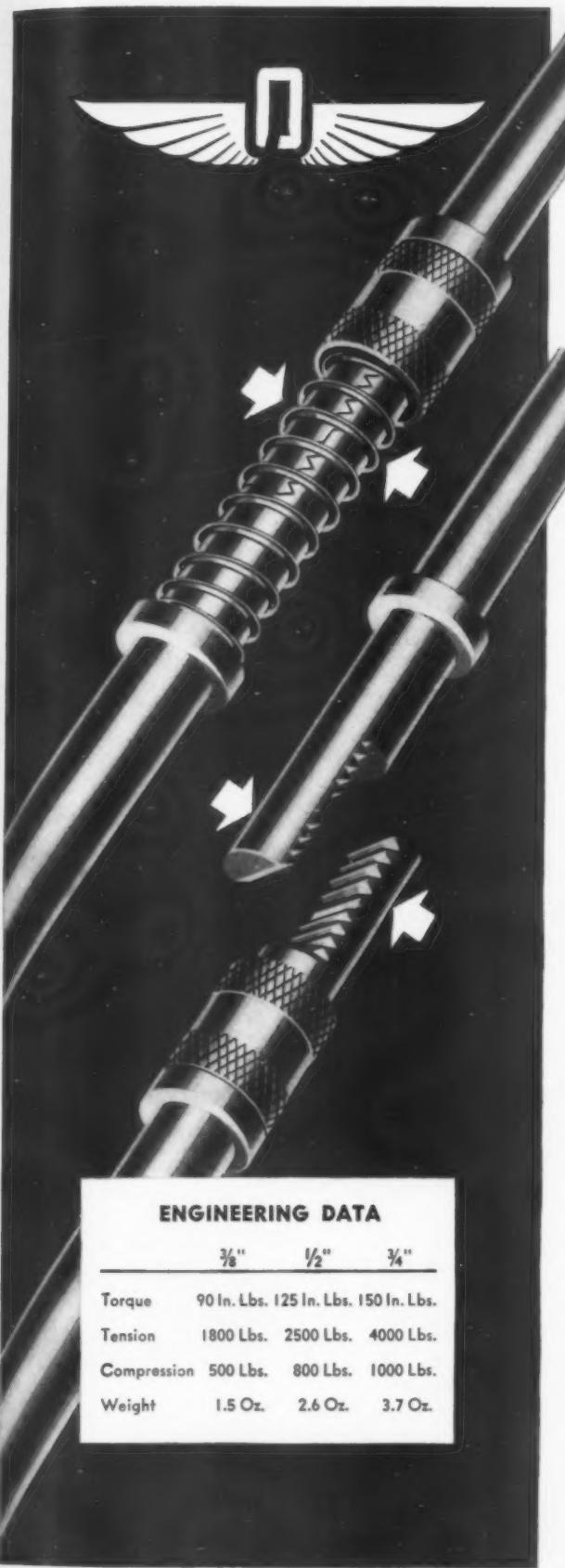
Kellett Reports \$48,739

Kellett Aircraft Corporation reports net income for 1943 was \$48,739. Sales were \$11,297,106; provision for postwar reserves \$158,197 and for federal and state taxes \$606,000.

Net income was equivalent to 11.8¢ per share on 428,098 shares of common stock outstanding.

Balance Sheet, Dec. 31, 1943, showed assets of \$3,347,807. Current assets were \$2,993,462; current liabilities \$2,376,852; capital stock \$428,098; paid-up surplus \$205,065; earned surplus \$107,791.

WRIGHT AERONAUTICAL CORP. announces that a Wright Cyclone-powered B-17 Flying Fortress recently made 93 take-offs and landings in a period of 13 hours, setting what the company claims is a new all-time record for sustained performance of engines and plane in one day.



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	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{3}{4}$ "
Torque	90 In. Lbs.	125 In. Lbs.	150 In. Lbs.
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Congressional Action Near On Contract Termination

The aircraft industry's contract termination problems were nearing action on the House and Senate floors, as this issue went to press.

On the Senate side of the Capitol, a subcommittee of Senate Military Affairs Committee favorably recommended for rapid action the Murray-George contract termination bill with a few minor amendments. This bill is drawn along the lines of the Baruch-Hancock report.

On the House side, the House Naval Affairs Committee made an intensive study of the problems with a view to reporting out legislation dealing with Naval contract termination in the near future. Introduced by the Committee's Chairman, Rep. Carl Vinson (D., Ga.), this legislation also conforms with the recommendations of the Baruch-Hancock report.

Concurrently, the House Military Affairs Committee reported out termination legislation with a basic difference from the Vinson and George-Murray bills. The Military Affairs legislation, a triumph for Comptroller General Lindsay Warren, would give the General Accounting Office the right of review over contract termination determinations by the procurement agencies. This policy has been vigorously fought by industry and the procurement agencies as entailing needless delay which would disrupt an orderly and rapid conversion from a wartime to a peacetime economy.

This discrepancy between the two

Bert Conway Named AVCO Vice President

Bert Conway, a manufacturing coordinator for the Aviation Corp. for the past year, has been named vice president in charge of manufacturing of the Chevrolet-Toledo plant; general master mechanic of the Pontiac plant in Detroit; and more recently in charge of manufacturing and production testing at the Allison aircraft engine plant in Indianapolis. He spent eight years with the Ford Motor Co. and three with the Liberty Starter Co. prior to joining GM.

House bills points to a floor fight.

The question of loans to war contractors, in anticipation of contract termination and in addition to interim financing which would be applied to such loans, has proved to be controversial in the Naval Affairs Committee.

Another point of interest to the aircraft industry is the disclosure made in the Senate Military Affairs subcommittee's report that "the question of whether or not termination wages should be specifically authorized as a charge against the Government is being discussed with the CIO and the AFL and with representative manufacturers."

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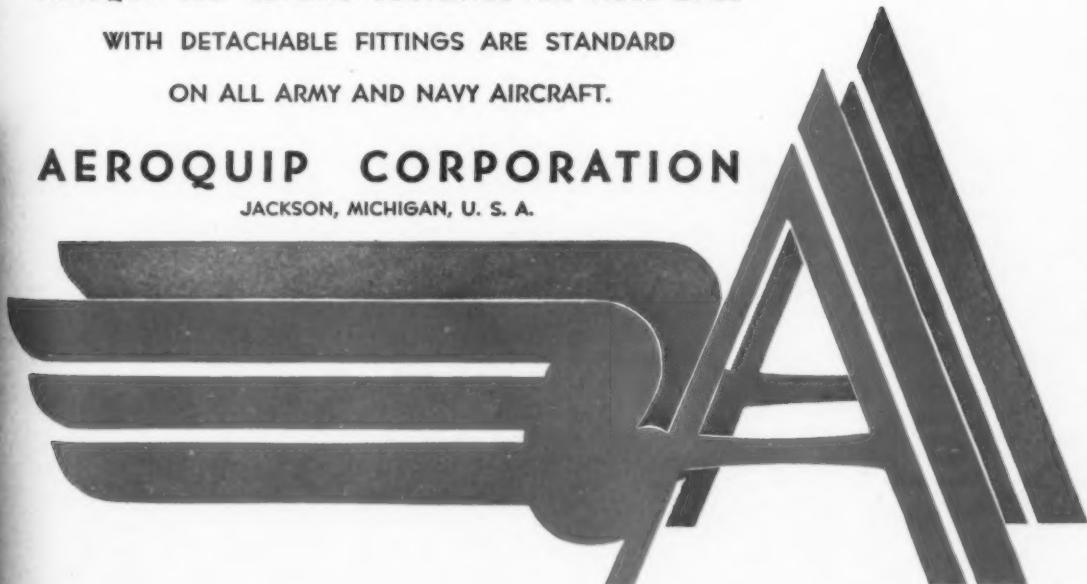
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